

SYMPOSIUM

ON -

SOCIAL & ECONOMIC

PROBLEMS

OF

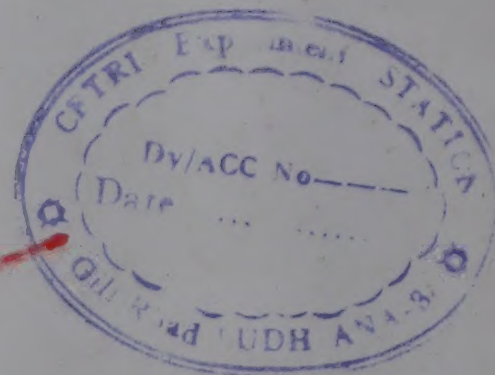
HILLY AREAS



**DIRECTORATE OF ECONOMICS & STATISTICS,
HIMACHAL PRADESH, SIMLA.**

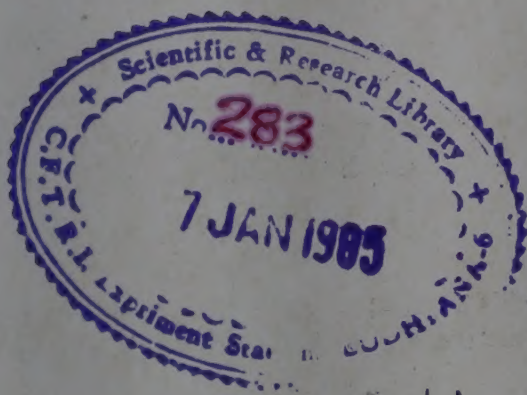
**25 Years of Formation of Himachal Pradesh
Commemoration Issue
15-4-1948 to 15-4-1973**

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**SYMPOSIUM ON
SOCIAL & ECONOMIC
PROBLEMS
OF HILLY AREAS**

*Issued by:
Directorate of Economics and Statistics,
Himachal Pradesh, Simla.*



U. 4442 N73

HIMACHAL PRADESH

Area: 55,673 Sq. Kms.

Came into being:

15th April, 1948

Latitude: 30-3°N to 33-3°N

Longitude:

75-3°E to 29°E



TOTAL POPULATION (1971 CENSUS): 34,60,434

Rural: 32,18,544

Urban: 2,41,890

Male: 17,66,957

Female: 16,93,477

Scheduled Castes: 7,69,572

Scheduled Tribes: 1,41,610

PREFACE

Himachal Pradesh completes its twenty-five years of eventful existence on 15th April, 1973. Himachal Pradesh which had a chequered political history achieved ultimately the Statehood on 25th January, 1971 i.e., just two years back. In the history of a State, which is entirely rugged and hilly in topography, where agricultural operations are difficult, industries are few and people are cut off from the main stream of social and economic nerve centres mainly due to lack of communications, a period of 25 years is perhaps not very long for the spread effects of the developmental activities reach the isolated and interior areas rather slowly. Yet during the preceding 25 years—right from the day when thirty and odd principalities were merged leading to the formation of Himachal Pradesh—the processes of the economic development were started in right earnest for the newly formed State (a Union Territory at that time) had inherited a near vacuum in the nature of economic development. It was a massive challenge to re-organise and re-vamp the entire economic structure, change the traditional outlook of the people and make bold experiments in the social and economic spheres which was accepted in a bold and spirited manner. Under the inspiring and dynamic leadership of Dr. Y. S. Parmar, Chief Minister, the State of Himachal Pradesh has made considerable progress.

2. The most important indicator of economic development in the hilly areas could be the tempo of road construction and in this direction, the road length which was barely 228 kms. in 1948 in Himachal Pradesh is expected to be 8,790 kms. by the end of the Fourth Five Year Plan. This is certainly not enough and much more has to be done in this realm if the poverty, ignorance and illiteracy of the hilly people has to be eradicated and the benefits of economic development made available at their door-steps. It is not only for Himachal Pradesh but also for all the hilly areas of the country that the construction of roads is of paramount importance for activating the economy.

3. Ever since the Directorate of Economics and Statistics was set up in 1955-56, it has been constantly engaged in the promotion of research and investigation in the socio-economic fields and dissemination of economic intelligence with a view to providing guideline and furnishing data required for the formulation of economic policies. With the growing stress on regional and lower level planning and studying the lowest strata of the society so as to provide economic benefits to them, I am quite sure that more and more such meaningful studies will be taken up by the Directorate which is bound to play a dominant role in the future.

4. Himachal Pradesh completes its 25 years of existence on 15th April, 1973. In order to make a proper introspection and assessment of the economic development that has taken place not only in Himachal Pradesh but also in other hilly areas of the country, it was thought desirable to bring out a symposium on the social and economic problems of the hilly areas of

the country with particular reference to the State of Himachal Pradesh. This symposium on social and economic problems of the hilly areas is bound to break fresh ground in the analytical study of the problems for the first time. The aim of this symposium is to bring forward the social and economic problems of hill areas not in an isolated manner but making it co-related and complementary to the economic activities in the plains so that the Administrators, Planners and all other concerned with such problems may appreciate it and offer the much needed solution wherever required.

5. The Directorate of Economics and Statistics of the State was entrusted the responsibility to bring out the symposium so that its publication synchronises with the twenty-five years of formation of Himachal Pradesh. I am happy to record that this additional responsibility was cheerfully borne by the Director and his devoted band of officers. A publication of this kind naturally places me under an obligation to many persons. I am particularly grateful to Dr. Y. S. Parmar, Chief Minister of Himachal Pradesh who has been taking a keen interest in the work of the Directorate of Economics and Statistics and whose inspiring encouragement has appreciably toned up the quality of the Directorate's performance in the recent years. Dr. Parmar has not only evinced keen interest in the publication of this symposium but has also been able to spare some of his precious time to contribute a thought provoking article on the problems of hilly areas. I also owe a debt of deep gratitude to all the authors and writers who have contributed articles for the symposium and without whose co-operation it would have been well-nigh impossible to think of a publication of this nature. The silent contribution of a number of officers and staff of the State Directorate cannot also be ignored as most of them have contributed their labour of love not under obligation of duty but primarily in the spirit of self-less service. Last but not the least, I must highly appreciate the efficient work done by Shri R. N. Pandey, Director of Economics and Statistics who took all the initiative in planning and bringing out the symposium. But for his sustained efforts and diligence it would have been practically difficult to bring out the symposium in time. Lest I should forget, the patient toil of the Directorate's team of efficient typists attracts an unqualified appreciation.

6. The views expressed in the signed articles included in the symposium do not necessarily reflect the views of the State Government(s) concerned. I hope the readers will find the contents of the symposium interesting, stimulating and engrossing.

B. C. NEGI, I.A.S.,
*Secretary (Planning, Economics and Statistics),
Government of Himachal Pradesh, Simla.*

ARTICLES AND AUTHORS

1. STRATEGY OF HILL AREA DEVELOPMENT
Dr. Y. S. Parmar,
Chief Minister, Himachal Pradesh.
2. DEVELOPMENT OF ROADS IN HIMACHAL PRADESH
Shri Ram Lal,
Public Works Minister, Himachal Pradesh.
3. LAND REFORMS IN HIMACHAL PRADESH
Shri Des Raj Mahajan,
Revenue Minister, Himachal Pradesh.
4. IMPORTANCE OF FORESTS IN THE ECONOMY OF HIMACHAL PRADESH
Shri Lal Chand Prarthi,
Forest Minister, Himachal Pradesh.
- ✓ 5. PLANNING AND PROGRESS IN AGRICULTURE: HIMACHAL PRADESH
Dr. Salig Ram,
Agriculture Minister, Himachal Pradesh.
6. SOCIO—ECONOMIC PROBLEMS OF HIMACHAL PRADESH
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Chief Parliamentary Secretary, Himachal Pradesh.
7. SOCIAL AND ECONOMIC PROBLEMS OF HIMACHAL PRADESH
Shri Hardyal,
Minister of State for Panchayats, Himachal Pradesh.
8. SOCIO—ECONOMIC PROBLEMS OF UNA DISTRICT
Shrimati Sarla Sharma,
Minister of State for Family Planning, Health and Co-operation, Himachal Pradesh.
9. THE PARENT AND THE FLEDGLING
Shri Lekh Ram Thakur,
Deputy Speaker, Vidhan Sabha, Himachal Pradesh.
10. PLANNED DEVELOPMENT IN HIMACHAL PRADESH
Shri K. N. Channa,
(Former) Chief Secretary, Himachal Pradesh.
11. EDUCATIONAL SCENE IN HIMACHAL PRADESH
Dr. R. K. Singh,
Vice-Chancellor, Himachal Pradesh University.
12. GROWING NEEDS OF A STATE—PROBLEMS BEFORE STATISTICIANS
Shri B. C. Negi,
Secretary (Economics and Statistics), Himachal Pradesh.

13. CONSUMPTION PATTERN AND PRICE MOVEMENT IN HIMACHAL PRADESH
Shri K. K. Bhatia,
Director, Labour Bureau, Ministry of Labour and Rehabilitation,
Government of India.

14. STRATEGY FOR POWER DEVELOPMENT IN HIMACHAL PRADESH
Dr. K. C. Thomas,
Chairman, Himachal Pradesh State Electricity Board.

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Director, Agriculture Department, Himachal Pradesh.

16. CHARACTERISTICS OF LABOUR IN HIMACHAL PRADESH
Shri R. N. Pandey,
Director, Economics and Statistics Department, Himachal Pradesh.

17. SOCIO—ECONOMIC PROBLEMS OF THE NORTH-EASTERN HILL
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and
Shri D. K. Sharma,
Statistical Assistant, Economics and Statistics Department, Himachal Pradesh.

19. PLANNING FOR DEVELOPMENT OF HILL TOURISM
Shri H. S. Sethi,
Deputy Director, Tourism Department, Himachal Pradesh.

20. NATIONAL/STATE INCOME AND ITS GROWTH IN HIMACHAL PRADESH
Shri R. S. Bhatnagar,
Deputy Director, Economics and Statistics Department, Himachal Pradesh.

21. INDO-GERMAN AGRICULTURAL DEVELOPMENT PROJECT
Shri A. R. Chauhan,
Project Officer, I.A.D.P; Mandi.
and

Shri Gian Singh,
District Agriculture Officer, Mandi.

22. EMPLOYMENT TRENDS IN HIMACHAL PRADESH
Shri P. K. Seth,
Statistician, Economics and Statistics Department, Himachal Pradesh.

23. GROWTH OF POPULATION IN HIMACHAL PRADESH DURING THE
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Shri K. K. Sharma,
Research Officer, Economics and Statistics Department, Himachal Pradesh.

24. HYDRO-ELECTRIC GENERATION AND ITS UTILISATION IN HIMACHAL PRADESH
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25. BACKWARD AREAS OF CHAMBA DISTRICT
Shri R. K. Bansal,
District Statistical Officer, Chamba District, Himachal Pradesh.
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District Statistical Officer, Mandi District, Himachal Pradesh.
27. ECONOMIC ANALYSIS OF HIMACHAL PRADESH STATE GOVERNMENT
BUDGET 1971-72 (R.E.) AND 1972-73 (B.E.).
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Statistical Assistant, Economics and Statistics Department, Himachal Pradesh.
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Contributed by Economics and Statistics Department, Himachal Pradesh.

APPENDIX

BASIC INFORMATION ABOUT HILLY AREAS



STRATEGY OF HILL AREA DEVELOPMENT

—*Dr. Y. S. Parmar,*
Chief Minister,
Himachal Pradesh.

The Himalayan hill region, which covers well over one-eighth of the total land area of the country, has seen neglect for centuries despite the fact that its geographical, historical, and cultural importance has been realised for India since time immemorial.

2. This region which embraces in its sweep the States or parts of the States of Jammu and Kashmir, Himachal Pradesh, Uttar Pradesh, West Bengal, Meghalaya, Manipur and Tripura and the Union territories of Mizoram and Arunachal, has a population of about two crores.

3. Himalayas were considered by the British, and even by earlier rulers, as an impregnable line of defence and as such development of roads and other communication facilities in its areas was not considered of any importance. Moreover, the sparse population of these areas could hardly attract attention. On the other hand, this factor induced the British to decide to locate their pleasure resorts therein. Consequently isolated pockets were developed as hill stations leaving the surrounding areas untouched for preservation of natural conditions and for assuring continued supply of unskilled labours and domestic servants to the semi-urban areas thus hurriedly built up in the mountains.

4. No doubt these hill resorts were connected with skeleton roads and were also provided amenities like water supply and drainage but the hills in general remained in a state of utter neglect. The position was worse in areas which were under the rule of local feudal Rajas, who had neither the resources nor the intention to ameliorate the condition of their subjects. The back-log of under development piled up with the passage of time and when India achieved independence, the hills were the plague spots in the country so far as development was concerned.

5. The post-independence era witnessed programme of development throughout the country and some development also took place in the hill areas but their special problems have so far not received the attention they deserve. In fact, very little effort has been made to develop the hill areas and to fulfil the aspirations of the people living therein. The pattern of central assistance though liberal in some cases is not a remedy in itself as something more than the financial resources is required for the rapid development of hill areas. The main problem, therefore, is to evolve a proper strategy suited specifically to the topographical and agro-climatic requirements of the hill areas.

6. A sizeable proportion of the population in the hill areas is either tribal or backward, who bound by their traditions do not generally respond quickly to social or economic change. Once a suitable strategy for proper planning for the hill areas is evolved, the pace of development could be accelerated by reorienting basic policies. But, so long as the yard sticks adopted for the plains are utilised to measure the economic needs of the hill areas there is very little hope to increase the momentum of development in these areas.

7. The hilly regions of the country have the lowest per capita income. The only exception is perhaps Himachal which ranks as the fifth State in India in this respect. There may have been some improvement in the living standard of the people here and there but when compared with the all India level, the per capita income even today continues to be very low. This will continue to be so till the whole strategy for the development of the hill areas is changed.

8. It is imperative that the basic objective of the development programmes for the hill areas has to be to bring about an increase in the per capita income. The economic activities of these areas have to be geared up and activated in such a way that people living therein have sufficient scope for improving their standard of living. Infra-structure facilities have to be provided so that the pace of economic activity is accelerated.

9. New economic activity in the shape of industrial development has, in general, not taken roots in these areas. In many parts of the region the people live in a state of isolation and have not identified themselves with the cultural and economic life of the country. Most of the time people have very little gainful economic activity. Agriculture still continues to be of subsistence nature and except for areas which have taken to horticulture and production of specialised seeds and vegetables, the income from agriculture has remained extremely low. It is, therefore, imperative that besides creating employment opportunities in diverse fields for effective utilization of the available manpower, agricultural and horticultural practices especially suited to the terrain of these areas have to be identified, introduced and encouraged for improving the return from land. Natural resources have also to be surveyed and plans prepared for their better utilization.

10. In the past, efforts have been made to develop the economy of the hilly areas on lines similar to that of the plains. The economic activity that can take place in the hills

has necessarily to be distinct though complementary to the economic activity of the plains. It cannot possibly be similar to it. Even the agro-climatic conditions in these areas are different from those of the plains. It is, therefore, necessary to build up an economy for these areas which is peculiar to itself but complementary to the rest of the country. If we take even the basic living conditions and utilization of resources, the difference in the cost structure would be too evident.

11. There are some basic features which lead to aggravate the primary cost of providing elementary basic facilities in the hill areas. Hill areas are prone to heavy rainfall, snow and biting cold. Extreme weather conditions reduce the working season considerably. Work thus takes longer time for its completion. Even while the work is going on, it has to be intermittent in nature due to intervention of heavy rains or snowfall. The land slides which are a common phenomenon, wash away construction work and block roads disrupting communications. The transportation of construction materials and basic inputs which in some areas has to be done on human backs and mules increases the cost manifold. Due to preponderance of small sized plots, mechanised farming has only a limited appeal. The fact that irrigation facilities are lacking, agriculture leans heavily on rains leading to a single cropping pattern. Thus, import of foodgrains from outside the State becomes unavoidable. Certain areas at higher altitudes are chronically drought prone and deficit and inter-State movement and storage of foodgrains is also necessitated. The prices of foodgrains passing through normal trade channel is prohibitive in most hill areas and the State Government, of necessity, is compelled to provide subsidy on transportation and prices of foodgrains. It is also not possible to ply trucks and buses of large laden weights as the roads are narrow. The result is that the cost per passenger/ton is higher. The depreciation of vehicles is of a higher order because of wear and tear. The number of workshops is quite low and private workshops are virtually non-existent.

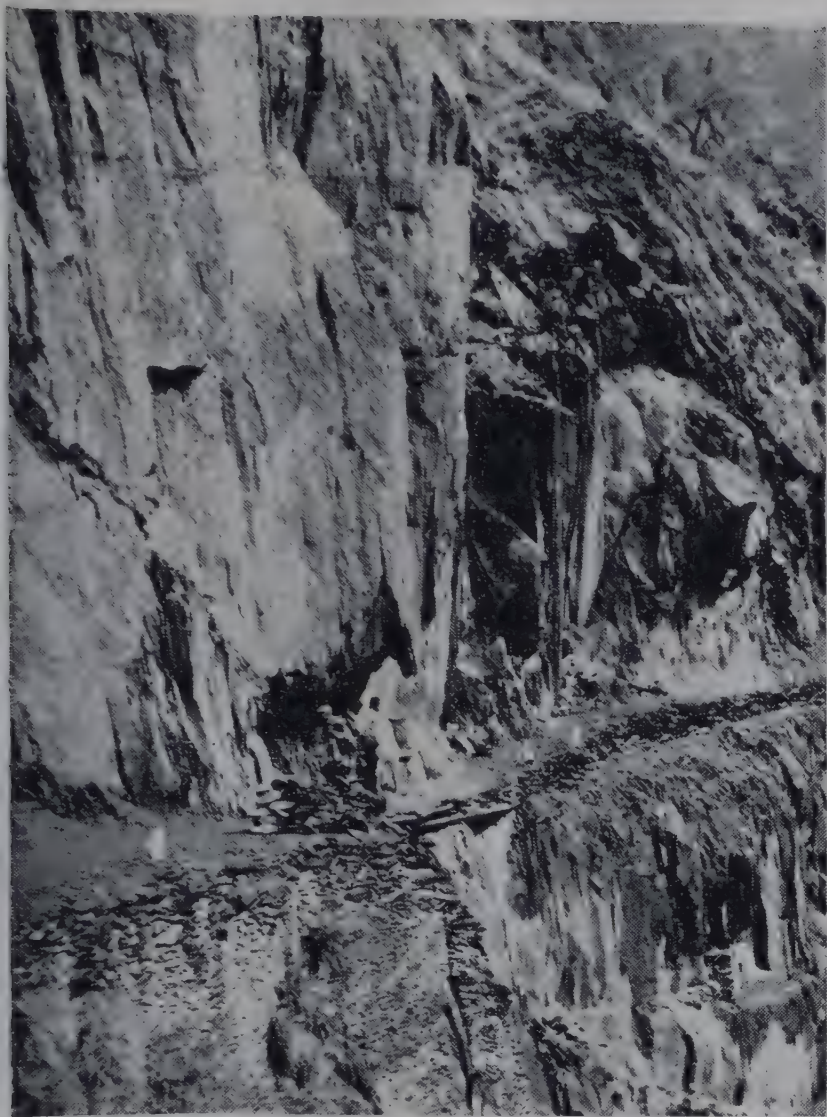
12. The cost per capita for providing schools, hospitals, roads, transport, irrigation and various other inputs both for industry and agriculture is comparatively very high due to low density of population and rugged mountainous terrain. The comparative per capita cost in the field of education is Rs. 235 in Himachal Pradesh as compared to Rs. 112 in Punjab and Rs. 118 in Haryana. The corresponding figures for college education are Rs. 616 for Himachal Pradesh, Rs. 470 for Punjab and Rs. 309 for Haryana. The cost of construction per kilometre of roads in Himachal Pradesh varies from Rs. 1,30,000 in the foot hills and valleys to about Rs. 2 lakhs in high hills. In Haryana, on the other hand the cost varies from Rs. 60 to Rs. 70 thousands only. Besides this, the cost of providing maintenance service owing to weather hazards also is very high. Thus, the high cost of expenditure for ensuring an efficient level of social services comparable to our neighbouring States naturally makes incumbent on the State to plan for huge investment for the development of the State.

13. It will be relevant here to note that the hill States are sparsely populated. The new formula under which central assistance is allocated to the States sets aside 60 per cent

on population basis, ten per cent for States with per capita income lower than the national average, 10 per cent for continuing major irrigation and power schemes, 10 per cent on the basis of tax effort in relation to per capita income and another 10 per cent for special problems of States. Under this formula the sparsely populated hilly areas are likely to be always at a disadvantage. This would mean perpetuation of the backwardness of these areas, because hills being sparsely populated would not be able to avail of the 60 per cent allocation on population basis. Besides there being no continuing major irrigation and power schemes in hills, they would be deprived of another 10 per cent of the allocation. Population alone, therefore, should not be the basis of allocation and it would be appropriate to consider population plus area for purposes of allocation of funds.

14. In hill areas, roads have been described as the life-line. The development of roads is indispensable as an infra-structural facility for opening up the economy in the fronts of horticulture, agriculture, power generation, industrial or tourist activity. In 1956, it was decided in a Conference of all the State Chief Engineers that all-India target should be set at 32 kilometres of road per 100 square kilometres of area by the year 1981 and for hilly areas, this figure should be doubled on account of circuitous and winding nature of roads. Thus, for Himachal Pradesh this target works to 64 kilometres of roads per 100 square kilometres of area. By the end of the Fourth Five Year Plan, the State would have 8,790 kilometres of surfaced and unsurfaced roads giving a density figure of 15.70 kilometres of roads per 100 square kilometers of area.

15. In Himachal Pradesh, which to day has one of the best net work of roads within the Himalayan region, the availability of motorable roads both surfaced and unsurfaced is only about 14.22 kilometres per hundred square kilometres (on 31st March, 1972) of area as compared to 30 kilometres in the country as a whole. This is inspite of the fact that it has been spending over 30 per cent of its plan allocation on roads. About 8,785 kilometres of additional roads will be required to bring Himachal Pradesh upto the all-India average. This is likely to involve an additional investment of about Rs. 200 crores keeping in view the fact that cost of construction per kilometre of road in high hills of Himachal Pradesh works out approximately to Rs. 2 lakhs. At the rate at which funds are being earmarked for road construction in Himachal Pradesh, it will take decades before the Pradesh can reach the all-India standard in the matter of availability of roads. The condition is much worse in other hill areas. While in the plains some sort of transport can always be utilised on the farm lands, it is just not possible to use any transport in the hills unless there is a vehicular road which is very expensive. Hence road construction is the most important development programme in the Himalayan region. The entire progress of the region depends on the development of roads. It is not possible to provide appreciable length of railways in these areas. Bullock carts cannot be plied in the hill slopes. Even mules and ponies cannot be utilised unless there are roads. It is not possible to carry as head loads and on mules, machines, equipment, fertilizers, insecticides, pesticides and other agricultural inputs to the interior of these areas. The terrain being all rugged and mountainous, no movement of any type of economic activity in any field is possible



Road through vertical rocks



A road in high mountains

unless there are roads and road transport. Nor is road construction in hills so easy as in the plains. Not only is the job expensive but also hazardous because it is extremely risky to cut the huge and massive steep rocks where slightest slip can mean sure death.

16. The Himalayan region offers almost unlimited scope for the production of hydro-electric power. In Himachal Pradesh alone, there is an existing power potential of 85 lakh kilowatts out of which only 3 lakh kilowatts capacity is likely to be utilised by the end of the Fourth Plan through Central and State schemes. While hydro-electric potential of these areas is left untapped, steps are being taken in other parts of the country to construct thermal and nuclear power stations. The cost of generation of hydro-electric power is many times lower, being about 2 Paise per unit as compared to 10 to 12 Paise per unit in thermal and nuclear power stations. Adequate funds have, therefore, to be earmarked for the utilization of this natural resource which can never get depleted as is the case of thermal or nuclear power stations. We have already proposed that a special fund be created for this purpose now that water has been declared to be a resource.

17. The problem of providing irrigation facilities in hilly areas is of an entirely distinct nature. Apart from gravity flow, in most of the places irrigation facilities can be provided only with the help of high lift irrigation schemes. Unless steps are taken to earmark adequate resource for the development of irrigation facilities, development of agricultural sector in these areas cannot make any effective headway. For lift irrigation purposes, the availability of cheap hydro-electric power is essential. The yard-stick for justification of funds for irrigation on the pattern of the plains is absolutely inadequate and is a great bottleneck in that regard.

18. Many a time, concern is expressed regarding the conservation of forests. Wood is utilised by the people living in these areas basically as fuel. In winter, when snow falls and thereafter with freezing winds and low temperature it is a problem to maintain the required normal heat in the body. Houses and their dwellers have to be kept warm. Except for wood, there is nothing at hand to protect against that cold for keeping the body and soul together. As long as there is no substitute for wood, the ravage to the forests will continue. This will go on depleting our forest resources. The same is true during rains also.

19. The only effective solution of the problem is to utilise the perennial waters from the streams and rivers for generating power and making it available to the farmers at so cheap rates that they no longer find it worth the trouble to collect fuel from the jungle. There are no coal deposits and transport of coal from distant coal mines is very costly. It is, therefore, necessary to provide an alternative source of heat for the people living in these areas. The only such source is electricity. Electricity will have to be taken to every village of these areas and made available to the people at a very cheap rate.

20. The present criteria of adequate return in the cost of electrification schemes, which is applicable to urban areas cannot and should not be made applicable to the hilly

region especially the rural areas. If immediate steps are not taken to provide electricity at cheap rates to the hilly areas, there is no way of saving the forests.

21. In the past decade a few hydro-electric projects have been constructed in Himachal Pradesh. The benefits of these projects have mainly flown to the adjoining areas of the plains. A perpetually distressing feature of the construction of power projects in the hilly regions has been the submergence of most fertile lands and creation of the problem of rehabilitation of oustees. It has to be realised that hilly areas are not meant to be exploited for the benefit of the people living in the plains. Full benefits arising out of the power projects have to be made available to the people living in these areas.

22. In the matter of irrigation also, the yard-stick of the plains has to be changed if irrigation projects, small or medium, have to benefit the farmer. According to set yard-stick only Rs. 750 can be spent for irrigating an acre of land. Even by gravity flow the cost cannot come to less than Rs. 1,000 an acre and as such no irrigation scheme can really be justified or sanctioned particularly because culturable area in the hills is very limited and small and big contiguous level areas are not available. At times, miles of long channels are to be constructed just to irrigate a few small fields.

23. It has, however, to be realised that in most of the areas gravity flow irrigation is not possible because the agricultural lands are higher than the source i.e., stream or river and lift irrigation is the only answer. The cost of lift irrigation, especially to considerable heights, which cannot be avoided, is very much higher and so an absolutely different pattern which would enable this very important and basic activity to be undertaken is necessary for the hills.

24. The land use pattern in the hills should be biased towards development of forests, pastures and orchards for conservation of soil and maximum land use. The importance of orchards is not only for the protection it offers against erosion but also for its significant contribution in raising the income of the growers and combining it with raising inter-crops. While Himachal Pradesh has adopted a massive programme for propagation of horticulture in the whole State, it will be highly desirable to have compact programmes in well defined areas which should provide a lion's share of the total marketable surplus. Apple orchard development with its long gestation period requires long range planning on the basis of growth in population, income and markets. It is also necessary to assess the area and productivity potential for each range of elevation and evolve a suitable strategy to determine the area under various fruits. The orchard development project proposed in Himachal Pradesh to be financed by the World Bank could serve as a model for other areas. Simultaneously, a proper system of marketing intelligence should also be developed so that the small growers could derive the maximum benefit. The intermediaries should be completely eliminated and the Agro-Industries Corporation and the Fruit Development Board should play a more dominant role in this regard not only by providing the marketing channels but also packing boxes and transport.

In support of horticulture development, the growth of processing units is also necessary. In order to make available tinned products at a reasonable cost it would also be necessary to undertake the manufacture of containers at cheap costs. Apart from fruits, there is also a large scope for the production of seed potato, vegetable seeds, vegetables and medicinal plants. While the production programme of seed potatoes is satisfactory, that for vegetable seeds and medicinal plants leave much to be desired.

25. A lot has, however, been done in the matter of agriculture and there certainly is a break-through in that respect but horticulture has hardly received serious attention excepting in some areas of Himachal. Besides attending to a few known fruits hardly any original work has been done in the matter of fruit growing and research. It may be due to the fact that the scientists and research workers do not know about the land and its capacity to produce. Having no conception of the hills and its products, they are naturally incapable to pay attention to the varied and rich wild edible fruits which grow abundantly in these hills but which for lack of knowledge of the area have not received the attention of the scientists and the research workers.

26. It is hardly known that Himachal Pradesh grows a lot of wild figs and wild olives and no serious and systematic effort has been made to evolve proper varieties out of them for making available good fruit and edible oil to the people of the country and handsome additional cash to the farmers.

27. The high valleys of Lahaul and Spiti, hundreds of kilometres away from the plains, present a challenge to our scientists and technicians. Is it not possible to evolve into good varieties the edible fruits that grow wild in that area? This can surely be done with proper application of scientific techniques and this will immensely benefit the farmers there and the consumers in the plains. Growing of fruits like apples, cherries, etc., will not be paying there due to heavy additional transport charges involved. In our own limited way, the Himachal Pradesh Government is trying to select such fruits which would be a rarity and as such would have maximum value and utility.

28. There is such an ignorance in the matter that even educated local people do not know what use could be made of the edible wild fruits growing there and how much money could these bring to them. In one of the neighbouring hills, I was surprised to find that particularly, "Cricket Ball" or Nakh, which could without difficulty or without special technique be grafted on wild pears growing in abundance in those areas had not been utilised at all. In fact, it was not at all known that it was wild pear and that proper quality pear could without difficulty be grafted on it.

29. Practically all temperate fruits and vegetables can be grown in the Himalayas but it is painful to find that so little is known about the hills and its potential wealth. Special attention is required to be paid towards the study of conditions in hills. By working according

to them, not only the chronic poverty of the mountainous areas would be removed, but there would be prosperity and abundance all around.

30. The Planning Commission have, from time to time, been laying down the sectoral plan priorities on an all-India basis. For instance, the earmarked sectors for the Fourth Five Year Plan are agriculture and applied sectors and elementary education. Efforts have been made on a number of occasions in the past to bring it to the notice of the Planning Commission that the plan priorities laid on an all-India basis by them, could not be made applicable to the hilly areas to the best of their advantage. For instance, lands located on the hill slopes can, in no circumstances, yield the same quantity of cereal crops as those located in the plain areas. At the same time the development of horticulture in the hill areas cannot take place without the provision of adequate roads. It was with great effort that we could get a special cell for hill development created in Planning Commission.

31. The planners have to pay special attention to the problems of the hilly areas and to identify the sectors which should receive top-most priorities therein. While agriculture is a top priority item for the plains, the construction of roads, development of hydro-electric power, rural electrification and development of tourism have to be earmarked sectors for the hilly regions. In any case communication i.e., roads and road transport and power, have to be in the same sector as agriculture and not in any other sector.

32. In the matter of location of public sector undertakings and the location of medium and large scale private sector projects, the hilly areas have been completely ignored. It is a fact that production cost and transportation costs in these areas will be to some extent, higher than the cost in areas located near main metropolitan cities and urban areas. But this should not stand in the way of dispersal of industries to these areas so that additional avenues of employment are created. Special incentives have to be provided to the industries in the public as well as private sectors to divert these industrial projects from the metropolitan areas to the hilly areas.

APPROACH TO THE FIFTH FIVE YEAR PLAN

33. Under the first four five year plans, more emphasis was laid on production while distributional aspects were largely overlooked. As a result, the poorer sections of the society have on the whole benefited much less than the comparatively richer classes. The need of the day, therefore, is to ensure an equitable distribution of income and wealth. In this context, the Planning Commission have emphasised the need to implement the following basic minimum needs programme during the Fifth Five Year Plan:—

- (1) Elementary education for children upto the age of 14 years.
- (2) Minimum public health facilities integrated with family planning and nutrition for children.

- (3) Rural water supply.
- (4) Home sites for landless labour.
- (5) Rural roads.
- (6) Rural electrification, and
- (7) Slum improvement in the larger towns.

34. Total requirements of funds for providing these basic amenities to the people in Himachal and for implementing some of the special employment schemes likely to be included in the plan and for carrying out normal developmental programmes would be as follows:—

(1) Minimum needs programmes	..	Rs. 136.50 crores
(2) Special programmes e.g., S.F.D.A./M.F.A.L.	..	Rs. 10.00 crores
(3) Normal development programmes including employment intensive schemes	..	Rs. 451.71 crores
TOTAL		.. Rs. 598.21 crores

35. However, taking into consideration the State's capabilities to raise additional resources and the assumption that the total level of outlay for the Fifth Plan would be about twice the size of the Fourth Plan, it is proposed to fix the plan size for the State at Rs. 225* crores. This outlay is proposed to be financed as follows:—

1. Central assistance	..	Rs. 155 crores
2. Additional resource mobilisation	..	Rs. 15 crores
3. Loans from Public and Commercial Banks	..	Rs. 40 crores
4. Institutional finance	..	Rs. 15 crores
TOTAL		.. Rs. 225 crores

It is expected that the central assistance of Rs. 155 crores would be made available on the basis of liberalised pattern of 90 percent grant and 10 per cent loan for the entire State.

36. Consequent upon the attainment of Statehood by Himachal Pradesh on 25th January, 1971, the pattern of central assistance for financing the plans of the State became applicable to this State also. Barring the two border districts of Kinnaur and Lahaul-Spiti, where the pattern of central assistance is 90 per cent grant and 10 per cent loan, for the remaining districts it was fixed at 30 per cent grant and 70 per cent loan. Since all the districts of Himachal Pradesh have been identified as hilly areas, the pattern of central assistance for financing the State's Fifth Five Year Plan should also be in conformity with the pattern applicable in case of the hill districts of Assam, Meghalaya and Nagaland i.e., 90 per cent grant and 10 per cent loan.

*Now revised to Rs. 260 crores.

37. Physical targets proposed to be achieved in some of the important economic sectors during the Fifth Five Year Plan period are as follows:—

- (i) *Horticulture*.—Area under fruits at the end of the Fourth Plan shall be of the order of 57,325 hectares. It is proposed to bring an additional area of 24,280 hectares under horticulture during the Fifth Plan period.
- (ii) *Minor irrigation*.—The net area sown in the Pradesh is 5,47,000 hectares. The area irrigated from Government and private sources during 1967-68 was 90,000 hectares i.e., about 16 per cent of the net area sown. During the Fourth Plan period an additional area of about 10,000 hectares is expected to be brought under irrigation. During the Fifth Five Year Plan period, it is proposed to irrigate an additional area of about 15,000 hectares. It is also proposed to undertake medium irrigation programme by providing two canals i.e., one on the left bank of Bata river measuring about 22 kilometres and the other on the right bank of Bata river measuring about 15 kilometres from the tail race waters of the Giri Hydel Project. Under this scheme about 5,000 hectares of land is expected to be irrigated in Paonta Valley.
- (iii) *Soil conservation*.—So far the agriculture department has been able to undertake 7,500 hectares of land under State sector and 2,000 hectares under centrally sponsored schemes under soil conservation and water management programme. During the Fifth Plan period, it is proposed to take up soil conservation measures in about 4.5 lakh hectares of land.
- (iv) *Power*.—It has been proposed to take up the execution of four new projects with installed capacity of 1,650 MW at a cost of Rs. 49 crores during the Fifth Plan period. Besides, six medium projects with installed capacity of 107.5 MW and four micro-projects with installed capacity of 900 KW are also proposed to be taken up costing Rs. 17.17 crores and Rs. 0.72 crore, respectively.
- (v) *Roads*.—By the end of the Fourth Plan, the State would have 8,790 kilometres of surfaced and unsurfaced roads, i.e., 15.70 kilometres roads per 100 square kilometres of area. In the Fifth Plan period, it has been proposed to construct 2,500 kilometres of roads raising the density of roads to 20 kilometres per 100 square kilometres of area.

38. Some of the more important aspects of hill development which need immediate attention have been discussed in the foregoing paragraphs. Several other equally important matters like reorientation of education system to meet local needs and starting of specialised youth services so as to channelise youthful energy and enthusiasm into constructive and productive channels, have also to be given adequate attention. Plan priorities should be changed so as to put roads on the top as experience has proved beyond doubt that roads are life-lines in the hills. The norms prevailing all over the country for road construction, industrial inducements, justification for electrification and irrigation schemes must be changed as in hills conditions are different and things cost much more. Cheaper power is essential to save forests by substituting power for heating and cooking instead of wood and by pushing

up speed of lift irrigation schemes as gravity flow schemes are not possible in the hilly terrain. The entire process of planning and development should be geared up without any further loss of time so as to usher in a new era in these strategic hills where local inhabitants have suffered neglect for generations and where a sense of being ignored still prevails. The hard-working hilly people living in the Himalayas have suffered silently but time has come when awakened public opinion expects of its own national leadership to appreciate its peculiar position and evolve special machinery and what is more important adopt special attitude towards their welfare.



DEVELOPMENT OF ROADS IN HIMACHAL PRADESH

—*Ram Lal,*
Public Works Minister,
Himachal Pradesh.

The roads constitute the very life line of Himachal's economy. Besides serving as an important link in bringing about the social and emotional integration of the people, roads have a pivotal role to play in aiding the economic development of the region through which they pass. By keeping the people and goods moving, they promote prosperity. A well integrated road development programme would help not only in integrating the rural and urban economies, but also in broadening the market economy. In any comprehensive scheme of development, therefore, road development must have a first priority in Himachal's economy. If the manifold resources and the available manpower of Himachal Pradesh are to be utilised for the benefit of the common man, they must be harnessed to channel the production and must move along the lines of communications, particularly road communication. The solution of many of our problems depends upon the provision of the roads.

2. Road construction in Himachal Pradesh is the most important development programme. It does not need to be over-emphasised that in a hilly State like Himachal Pradesh, the entire progress of the region depends primarily on the development of roads. It is not possible to provide appreciable length of railways in these areas. Bullock-carts cannot be plied on hilly slopes. The terrain being rugged and mountainous, no movement of any type of activity in various fields like that of agriculture and horticulture is at all possible unless there are well-developed systems of roads and road transport.

3. The following table shows how Himachal Pradesh compared with other States in respect of roads:—

TABLE 1—ROAD LENGTH IN VARIOUS STATES OF INDIA IN RELATION TO AREA AND POPULATION
AS ON 31-3-1969

(in kilometres)

State/Union territory	Roads per 100 sq. kms of area			Road per lakh population		
	Surfaced	Unsurfaced	Total	Surfaced	Unsurfaced	Total
1. Andhra Pradesh ..	12	21	33	80	133	213
2. Assam ..	4	29	33	33	233	266
3. Bihar ..	8	25	33	24	76	100
4. Gujarat ..	8	14	22	61	102	163
5. Jammu and Kashmir ..	2	6	8	95	352	447
6. Kerala ..	50	94	144	93	175	268
7. Madhya Pradesh ..	6	9	15	69	100	169
8. Maharashtra ..	11	9	20	70	54	124
9. Mysore ..	20	14	34	130	96	226
10. Nagaland ..	2	27	29	69	1,039	1,108
11. Orissa ..	6	31	37	44	232	276
12. Punjab/Haryana ..	16	53	69	62	208	270
13. Rajasthan ..	5	12	17	72	154	226
14. Tamil Nadu ..	33	16	49	110	55	165
15. Uttar Pradesh ..	9	35	44	31	114	145
16. West Bengal ..	18	43	61	37	85	122
17. Himachal Pradesh ..	3.30	8.18	11.48	54	133	187
18. Union Territories ..	3	16	19	53	248	301
ALL-INDIA ..	10	20	30	61	119	180

4. It can be seen from this table that Himachal Pradesh ranks second lowest as far as the roads per 100 square kilometres of area are concerned. Our position is much below the aggregated national mark for total roads per 100 square kilometres of area. The availability of motorable roads both surfaced and unsurfaced is only 11.48 kilometres per hundred square kilometres of area as compared to 30 kilometres in the country as a whole. By the end of the Fourth Five Year Plan, the State would have 8,790 kilometres of surfaced and unsurfaced roads which would give a density figure of 15.70 kilometres of roads per 100 square kilometres of area. At the initiative of the Ministry of Transport and Shipping, Government of India, it was decided in a Conference of all the State Chief Engineers in 1956 that all-India target should be set at 32 kilometres of roads per 100 square kilometres of area by the year 1981. For hilly areas, the figure was to be doubled on account of circuitous and winding nature of roads. Thus, for Himachal Pradesh, this target works out to 64 kilometres per 100 square kilometres of area. It will be extremely difficult to achieve the target of 64 kilometres per 100 square kilometres of area in the near future. It has, therefore, been proposed to have a target of 48 kilometres per 100 square kilometres by 1994 i.e., by the end of the 8th Five Year Plan. During the Fifth Five Year Plan period, it will be necessary to construct 2,500 kilometres

of roads, if the road density is to be raised to the modest level of 20 kilometres of roads per 100 square kilometres of area. Besides this, the existing roads will also be improved and for this purpose, it has been estimated that at least Rs. 60 crores will be required to carry out the programme.

The above road availability has been worked out on the basis of the projected horizontal area, i.e. projections at the base and does not include the area of the slopes and valleys. If the area of the slopes and valleys is also taken into account, which should rightly be done in order to present a more realistic picture of the road requirement in a hilly tract like Himachal Pradesh, this figure (i.e., 11.48 kilometres per 100 square kilometres of area) is bound to go down considerably.

5. At the rate at which funds are being provided for road construction in Himachal Pradesh, it will take decades before the Pradesh can reach all-India standard in the matter of availability of roads. The following table presents the available data on development of roads in Himachal Pradesh.

TABLE 2--DEVELOPMENT OF ROADS

						(Rs. in lakhs)
Plan period			Roads		Total expenditure all sectors	Expenditure on roads as % to total expenditure
			Outlay	Expenditure (excluding border roads)		
First	Plan—(1951—56)	..	235.00	225.41	527.25	42.8
Second	Plan—(1956—61)	..	427.50	533.84	1,602.60	33.3
Third	Plan—(1961—66)	..	800.00	1,018.11	3,384.47	30.1
Fourth	Plan—(1969—74)	..	2,800.00	..	..	..
ANNUAL PLANS						
	1966-67	..	240.00	268.03	946.05	28.3
	1967-68	..	450.00	424.54	1,456.92	29.1
	1968-69	..	350.00	506.34	1,597.85	31.7
	1969-70	..	404.30	514.00	1,735.86	29.6
	1970-71	..	477.00	492.00	1,729.60	28.4
	1971-72	..	577.00	628.00*	2,189.00*	28.7

*Anticipated outlay/expenditure

Note.—The figures relate to plan expenditure as reconciled by the audit office and do not include the non-plan expenditure or the expenditure incurred on roads by Border Roads Organisation.

During 1969-70, about 0.64 per cent of the total national income was spent in India in road construction. This percentage was 4.43 in Norway and 3.49 in Switzerland during 1969. In Himachal Pradesh, it constituted about 2.75 per cent of the total State Income estimates during 1969-70.

ACHIEVEMENTS

6. On the formation of Himachal Pradesh in 1948, it had an area of 10,708 square miles and the available motorable road mileage worked out to 1.6 mile per 100 square miles of area. Due to such a low state of development of roads, the Government rightly spent over 30 per cent on road construction during the first three plan periods. The total expenditure on roads and revenue from the road transport in the Pradesh is given below:—

TABLE 3—REVENUE FROM ROAD TRANSPORT AND EXPENDITURE ON ROADS

(Rs. in lakhs)

Year	Revenue	Expenditure on		Total	Expenditure as percentage of revenue
		Development (including border roads)	Maintenance		
1966-67	.. 189.06	270.94	70.77	341.71	180.7
1967-68	.. 205.66	472.97	118.94	591.91	287.8
1968-69	.. 245.46	561.43	124.99	686.42	279.6
1969-70	.. 282.72	540.28	131.03	671.31	237.4
1970-71	.. 265.52(AE)	558.27	151.93	710.20	267.5
1971-72	.. 385.00(BE)	671.61	208.00	879.61	228.5

7. It may be seen from the above table that the expenditure on development of roads for 1971-72 has registered an increase of about 150 per cent over the expenditure for the year 1966-67. The total expenditure for the year 1971-72 registered an increase of about 158 per cent over the year 1966-67.

8. The pace and progress of road construction in the Pradesh is given below:—

TABLE 4—ROADS IN HIMACHAL PRADESH

(in kilometres)

Type of road	1956	1961	1965	1969	1970	1971	Compound growth rate for 1956-71 % per annum	Absolute % increase in length (1956-71) per annum
1. Motorable								
Double-lane ..	—	346	402	1,434	1,493	1,526	16.1*	34.10
2. Motorable single-lane ..	587	1,097	1,446	4,763	5,200	5,844	16.4	59.70
3. Jeepable ..	684	522	888	795	550	608	0.69	0.76
4. Less than** jeepable ..	1,142	1,367	979	2,143	2,200	2,400	5.2	7.34
5. Total ..	2,413	3,332	3,715	9,135	9,443	10,378	10.3	22.01

*This is growth rate over a period of 10 years i.e. 1961 to 1971.

**Includes less than jeepable (mule track/bridle path).

9. The compound growth rate for all types of roads added together, worked out to 10.3 per cent per annum for the period 1956—1971. But considering the hilly and difficult terrain of the Pradesh, spread over an area of 55,658 square kilometres and ranging in altitudes from 460 metres to 6,400 metres above mean sea level, the present position of the availability of roads is not very much encouraging. There are practically no railways and water ways to cater to the needs of traffic, which primarily depends upon road communication.

10. The 20 year road programme for the whole of India prepared by the Chief Engineers, envisages 52 miles of roads per 100 square miles (32.3 kilometres per 100 square kilometres) of area in the whole country and 104 miles per 100 square miles (64.6 kilometres per 100 square kilometres) of area in the hilly areas, like Himachal Pradesh. Obviously in the hilly areas, construction of roads is done against heavy odds. The high ranges and rapid streams are formidable barriers in the road construction programme. Under such circumstances, the road alignments generally run along the river beds or along the slopes, taking a number of turns to maintain the desired gradient. Then the sunny side of the tract is also kept in view, for making the roads all-weather and more useful. All these factors add to the unnecessary length of roads and many a time comparatively more length of road has to be constructed to serve the places, otherwise not so distant. Even the cost of construction per kilometre of road is comparatively much higher in hilly areas, as compared to plain areas, and varies from Rs. 130,000 in the foot-hills and valleys to about Rs. 2 lakhs in high hills, excluding cost of metalling and tarring.

11. On the basis of 32.3 kilometres of roads per 100 square kilometres of area, this State requires 17,990 kilometres of roads, whereas we have at present only 7,978 kilometres (excluding less than jeepable) of roads. The compound growth rate of roads from the year 1956 to the year 1971 has been 10.3 per cent per annum as given in Table 4. It would not be possible to maintain this compound growth rate due to paucity of funds. Even if we maintain the compound rate of 5 per cent per annum, we would be able to reach the road density of 32.3 kilometres per 100 square kilometres of area fixed for the country as a whole in over 17 years' time. On the basis of requirement as per the recommendations for hilly areas, i.e. 64.6 kilometres per 100 square kilometres of area, our modest requirement of roads works out to 35,980 kilometres. If the increase in the road length is maintained at the compound growth rate of 5 per cent per annum, it will take over 32 years to reach the target of 35,980 kilometres.

12. As stated earlier, the rapid economic and social development of the Pradesh is rather difficult to imagine without any efficient system of transport and communications. The Pradesh has vast resources of forests, horticulture and other cash crops like potato and ginger. The scope for tourism is extensive. In addition, industries like manufacture of cement and newsprint, have bright prospects. The potential of power production is immense. The mineral wealth remains hidden and unexploited. But the entire progress depends upon the development of roads. More so, in the absence of any other acceptable modes of transportation as railways, waterways, etc., greater emphasis continued to be laid on the construction of a net work of roads in the development plans of the Pradesh. About 30 per cent of the total

plan expenditure is being spent on road construction programmes. Even then, the funds required for this programme have not been sufficient and more often than not the pace of construction had to be slowed down considerably due to inadequate allocation of funds for the purpose.

13. The tempo of rural electrification programme is also directly linked with the system of road transport and communications. In the hilly and difficult terrain like that of the Pradesh, roads are the essential infra-structure for bringing power to rural areas and thus provide the rural masses with one of the amenities enjoyed by the urban population. Till recently the non-availability of good roads in the Pradesh has mainly been responsible for slow rural electrification programme. Whereas the neighbouring States of Haryana and Punjab have been able to build up an efficient system of roads and railways in their States and are far ahead of Himachal Pradesh in the rural electrification programme, inspite of the fact that the Pradesh is far more rich than these states in power potential. Haryana was even able to conceive and execute a crash programme of rural electrification during 1970-71 and now all the villages in Haryana are electrified. A comparative position with regard to rural electrification in these three States is given as under:—

TABLE 5—RURAL ELECTRIFICATION

State		No. of inhabited villages	No. of electrified villages as on 31-3-1971	Percentage of electrified villages to total villages
1		2	3	4
Himachal Pradesh	..	16,920	4,085	24
Punjab	..	11,947	6,912	58
Haryana	..	6,731	6,731	100

14. The pace of rural electrification programme among the districts of the Pradesh further fortifies the argument, that the availability of good roads is very much essential for rapid electrification of the villages. The table below depicts, the availability of metalled roads and the villages electrified in various districts of the Pradesh as on 1st March, 1971.

TABLE 6—NUMBER OF VILLAGES ELECTRIFIED BY DISTRICTS

(As on 31.3.1971)

District 1				No. of electrified villages 2	Metalled roads (exclud- ing National Highways) (Kilometres) 3
1. Mahasu	..	..	..	1,326	407
2. Kangra	..	..	..	893	761
3. Mandi	..	..	..	578	257
4. Sirmur	..	..	..	360	222
5. Bilaspur	..	..	..	356	151
6. Simla	..	..	..	287	205
7. Chamba	..	..	..	205	100
8. Kulu	..	..	..	30	86
9. Lahaul and Spiti	..	..	..	26	10
10. Kinnaur	..	..	..	24	18
Total	..	..	..	4,085	2,217

15. It will be seen from the above table that electrification programme is more or less directly proportional to the availability of good roads.

16. The expenditure incurred on rural electrification in the Pradesh and the number of villages electrified during the various plan periods is given below:—

TABLE 7—EXPENDITURE ON ELECTRIFICATION PROGRAMME

Plan period 1	Expenditure incurred on rural electrifi- cation (Rs. lakhs) 2		No. of villages electrified (Nos.) 3	Average cost of electrifying a village (Rs. thousands) 4
First Plan (1951-52 to 1955-56)	..	21.59	132	16.4
Second Plan (1956-57 to 1960-61)	..	135.19	670	20.2
Third Plan (1961-62 to 1965-66)	..	186.58	1,046	17.8
ANNUAL PLANS:				
1966-67	..	62.47	348	18.0
1967-68	..	95.42	495	19.3
1968-69	..	138.86	504	27.6
Fourth Plan (1969-70 to 1973-74)				
Year-wise:				
1969-70	..	139.13	463	30.0
1970-71	..	160.74	415	38.7

17. According to the current estimates, for electrifying an average village of about 40 households, the average cost works out to about Rs. 40,000 to 50,000 including distribution system and a transformer. The electrification of any village becomes feasible, if the village lies within a half-mile radius of the line or the sub-station. Furthermore feasibility of electrification is decided on the number of houses to be served, capacity of the transformer, the line and the connected load on the same, size of the conductor and the voltage condition on the point of L.T. line from where the extension has to be made. Thus in order to lay lines with good capacity of the transformer to carry good load and better size of the conductor and the voltage condition, it is essential to have a good network of roads first. Only then this work could be taken up efficiently and economically as the cost and the time required for the transportation of machinery, equipment and other material will be reduced appreciably. If the rural electrification programme in Himachal Pradesh has to be implemented quickly, then it becomes all the more necessary to have a net-work of good roads.

18. Another factor which is also worth mentioning here is the cost of road construction in the hilly areas. In harder areas, the average cost of construction of road is about Rs. 2 lakhs per kilometre (15 feet wide and 22 feet on curves) excluding cost of metalling and tarring. Similarly, the cost of maintenance of the roads in such areas is also very high. Thus, if the present pace of construction of roads is to be stepped up for ensuring rapid economic and social development of the Pradesh, the present allotment of funds (between Rs. 6 or 7 crores per annum) has to be raised substantially. Roads, therefore, deserve to receive high priority in our development plans, as the entire progress of the area is inter-linked with the existence of good roads. Road construction has also got the greatest potential in generating employment in a backward State like Himachal Pradesh, which has very limited industrial activity. Even under the crash programmes, importance has been given to road construction. Keeping all these factors in view, it will be appropriate to treat road construction programme as in "earmarked sector", so far as hilly areas are concerned. Uptill now, the road construction programme has been implemented in Himachal Pradesh with sincerity of purpose. Time has perhaps reached to prepare a long-term road development plan alongwith a similar plan for exploitation of hydel energy and construction of dams. In the absence of such an integrated approach, construction of a dam/reservoir in the areas which are served by roads at present, will only submerge them in future calling for more investment on road construction. Such a situation could perhaps be easily saved, if the two departments concerned envisage a co-ordinated plan for development.



LAND REFORMS IN HIMACHAL PRADESH

—*Des Raj Mahajan,*
Revenue Minister,
Himachal Pradesh.

Himachal Pradesh was formed as a Chief Commissioner's province on the 15th April, 1948 by merger of the erstwhile princely States of Mandi, Chamba, Sirmur, Suket and a number of Simla Hill States. Bilaspur was integrated in Himachal on 1st July, 1954.

2. In the erstwhile princely States, there were different systems of land tenure which in some cases were primitive. Immediately after the formation of the Pradesh, the reform in the system of land tenure and tenancy laws engaged the attention of the Government. In most of the princely States the Rulers were recorded as superior owners of the land (Ala Malik) and the actual land owners as the inferior owners (Malik Adna). The first step taken, therefore, by way of tenurial reform was to abolish this feudatory system of superior ownership.

3. With a view to securing uniformity of tenancy laws in the Pradesh, the Punjab Tenancy Act, 1887, was made applicable to Himachal Pradesh by the Himachal Pradesh (Application of Laws) Order, 1948. Later in the year 1951, the Punjab Tenants Security of Tenure Act, 1950 was extended to Himachal Pradesh.

4. During the year 1952, the Punjab Tenancy (Himachal Pradesh Amendment) Act, 1952 and the Himachal Pradesh Tenants (Rights and Restoration) Act, 1952 were enacted. By the first mentioned Act, the maximum limit of rent payable by the tenant to a land-owner was fixed at 1/4th of the produce. By the second mentioned Act, certain tenants were given rights of pre-emption of land sold by the land-owner. The tenants were given rights of restoration of their lands from which they were ejected after 15th August, 1950. All orders and decrees of ejectment passed by the Revenue Officers or Revenue Courts were made inexecutable.

5. The first major land reform legislation known as the Himachal Pradesh Abolition of Big Landed Estates and Land Reforms Act, 1953, was enacted which after receiving the assent of the President came into force on 26th January, 1955. The Act governed the law relating to tenancies in agricultural lands and also contained provisions of land reforms of a far reaching importance. Under the Act, security of tenure to the tenants was ensured. Resumption of land by land owners was permitted for personal cultivation from a maximum area of 5 acres subject to further provision that no tenant would be evicted from more than 1/4th of the area held by him. This right could be exercised within one year from the commencement of the Act. These dates were later extended to March 1st, 1956, and September, 1956. The aforesaid law was challenged by the landowners in courts which, ultimately resulted in survival of the law as *intra vires* of the Constitution in the year 1958. The right of resumption was somehow missed by the landowners.

6. Under section 27 of the Himachal Pradesh Big Landed Estates Abolition and Land Reforms Act, the rights, title and interest of a landowner holding land in excess of Rs. 125.00 of annual land revenue, and which was with the tenants vested in the State Government from the date of the commencement of the Act, on payment of compensation on a sliding scale, which is the multiple of land revenue and rates and cesses chargeable thereon as provided in the schedule appended to the Act. This provision did not apply on land under personal cultivation, private forests and waste land (non-tenancy) with the landowners. On vestment of land in the State Government, the same was transferable in favour of the cultivating tenants against payment of a nominal compensation. In all, 286 big landed estates came under purview of this provision and out of these 281 estates have been abolished and the remaining 5 estates are under litigation in the law courts. As many as 56,710 tenants have acquired proprietary rights under this provision. Among the landowners were also *Jagirdars*, *Muafidars* and *Inamkhars* and their *jagirs*, *muafis* and *inams* were resumed in the process of vestment.

7. The tenants of landowners not covered by the aforesaid provision could acquire ownership rights of their tenancy land by making an application to compensation officers under Section 11 of the said Act. Under this provision 52,212 tenants have acquired proprietary rights.

8. On 1st November, 1966, as a result of re-organisation of the Punjab State, certain areas of the erstwhile Punjab were merged in Himachal Pradesh, thus resulting in fulfilment of aspiration of Himachal people for greater Himachal. Immediately on merger of such areas, the disparity in the land laws of the merged and old areas became evident. There were complaints of arbitrary ejectments of tenants from the merged areas. Therefore, the first step to ameliorate the lot of tenants in these areas was that Himachal Pradesh Vidhan Sabha passed the Himachal Pradesh (Transferred Territory) Tenants (Protection of Rights) Act, 1968, providing security against ejectment of the tenants. The ejectments under the Act could be made on the grounds similar to that available in the old area tenancy laws. This Act was valid

for a year. Then the life of the Act was further extended for two years by two amending Acts of 1969 and 1970 and the Government was empowered to extend its validity, if necessary, by way of notification under the 1970 Act. Thus, the Government further extended its validity by notifications up to November, 1971. In 1971 September Session, the Vidhan Sabha passed the Himachal Pradesh (Transferred Territory) Tenants (Protection of Rights) Act, 1971, putting a blanket ban on ejectments of tenants for one year. This period was further extended for six months by promulgating an Ordinance which was replaced by an amending Act passed by the Vidhan Sabha in December, 1972.

9. Immediately on merger of areas from the Punjab, the unification of tenancy and land reforms laws came under the examination of the Government. In the meanwhile, a discussion on national level in pursuance of the policy of the Government started. The Government of India appointed Central Land Reforms Committee of which our Chief Minister was also a member. The recommendations of the Committee were further gone into by the Nine Member Panel of the All-India Congress Committee. These were further reviewed in the Chief Ministers Conference held in Delhi on 23rd July, 1972. The Government of India issued guidelines on the ceiling and exemptions on the basis of the decision taken in the aforesaid conference.

10. The Himachal Pradesh Vidhan Sabha in its last session passed the Himachal Pradesh Ceiling on Land Holdings Bill, 1972 and the Himachal Pradesh Tenancy and Land Reforms Bill, 1972 thus redeeming the pledge given to the public of bringing a comprehensive land reforms laws.

11. Under the Ceiling on Land Holdings Bill, 1972, a ceiling of 10, 15 and 30 acres for land under assured irrigation capable of growing two crops in a year, land under assured irrigation capable of growing one crop in a year, and other categories, respectively, has been fixed. The ceiling for other categories of land in difficult and inaccessible areas of Kinnaur and Lahaul and Spiti and some similar other areas has been fixed at 70 acres. This ceiling is for a family of husband, wife and three minor children. Every additional minor member can have 1/5th of the permissible area provided that the ceiling does not exceed twice the permissible area. Every adult son or daughter is to be treated a separate unit but the permissible area of a family and that of separate unit put together should not exceed twice the ceiling. The surplus area will vest in the State Government against payment of compensation which is the multiple of the land revenue and the rates and cesses. On vestment, the surplus area will be distributed among the landless agricultural labourers and those persons whose land-holdings do not exceed one acre according to a scheme to be made by the State Government. The ceiling law has been made applicable with effect from 24th January, 1971 whereafter all transfers except bonafide transfers, made to defeat the purpose of ceiling will be ignored.

12. The land ceiling with respect to merged areas stands lowered down as compared to the existing law and with respect to old areas it has been imposed for the first time regarding the land under self-cultivation. The *banjar* land and private forest land in excess of permissible

area will also vest in the State Government. A substantial land is expected to be available for distribution to the landless agricultural labourers about whom the problem in the State is not of the same dimension as is the situation in some other States. By vestment of waste land and forests, the Government will have better control on such areas for land utilisation and land management in the State.

13. By enacting the Tenancy and Land Reforms Bill 1972, a new era marking abolition of intermediaries on land has ushered in the State. From the commencement of the Act, all the occupancy tenants in the old areas and *kismi* tenants in the new areas will become owners of their tenancy land. The small land owners will be entitled to reserve land for personal cultivation up to 1-1/2 acres irrigated or 3 acres unirrigated land. The tenants in such affected holdings will simultaneously become owners of the remaining tenancy land. The rest of the non-occupancy tenants (including sub-tenants) will become owners of their tenancy land from 1st October, 1973 on payment of nominal compensation of 96 times the land revenue and rates and cesses chargeable thereon. This conferment of compulsory right of purchase of land by tenants was necessitated as inspite of the provisions in the Himachal Pradesh. Abolition of Big Landed Estates and Land Reforms Act, for some reasons or the other the tenants were not coming forth to apply for ownership. Now the tenants will not be put to litigation and undergo the ordeal of trial of their cases in the Courts of Law.

14. Himachal Pradesh contributes a large number of men and officers to the Armed Forces of whom we are proud. Sufficient safe-guards have been provided to protect their interest in land. Under the new law, tenants of the serving soldiers will not be able to acquire ownership of the tenancy land. On ceasing to be member of Armed Forces, they can resume up to 5 acres of land for personal cultivation, provided such members of the Armed Forces were cultivating the land personally before joining the Armed Forces. Eventually where the father of a person at the time of joining the Armed Forces was holding the land has also been covered. If the father of a person who is serving in the Armed Forces creates a tenancy of his land and thereafter dies, then to the extent of the share of the person in the Armed Forces, such a tenancy shall be deemed to be a lease and service of the son in the Armed Forces shall be deemed to be an inability or disability for the purposes of cultivating the land personally and the tenancy shall be treated as a lease; provided that if the son of a person in whose favour the tenancy has been created is also a member of the Armed Forces. Then in such a case the tenancy shall not be treated as lease.

15. Similarly, the interest of weaker sections of the society will be protected like widows, unmarried woman or if married, divorced or separated from husband, a person permanently incapable of cultivating land by reason of physical or mental infirmity or a person temporarily prevented by sufficient cause beyond his control from cultivating land.

16. Another important change in tenancy law is that in case of dispute between the landowner and the tenants regarding the existence or non-existence of the tenancy the burden of proof will lie on the landowner to prove that tenancy does not exist.

17. Tenants on acquisition of ownership rights will not be able to transfer such land for a period of ten years, except for a productive purpose permitted by a Collector.

18. Purchase of land from the local agriculturist in the State by the moneyed class of people even from other States at fancy price was causing concern to the Government. Now an opportunity has been availed to provide in this agrarian reforms law for imposing restrictions on transfer of land in favour of the non-agriculturist who do not cultivate land personally in Himachal Pradesh. This would prevent staging a come back by the absentee landlordism by the back door.

19. For the purpose of this provision, the term agriculturist has been defined and the traditional caste-based definition of the term has been replaced by a definition based on the fact whether or not a person cultivates land personally in Himachal Pradesh irrespective of caste.

20. The unification of the tenancy and land reforms laws in the State was a difficult task. The tenants in the merged areas were labouring under a sense of discrimination who will now heave a sigh of relief by removal of disparities. We did not rest content by merely enacting a ceiling law within the time schedule set by the Government of India but at the same time enacted the tenancy and land reforms law within the same schedule side by side. Thus, Himachal Pradesh has maintained the tempo of progressive land reforms and maintained the tradition that the first popular ministry started in the year 1953 by enacting the Himachal Pradesh Abolition of Big Landed Estates and Land Reforms Act hailed as one of the most progressive piece of legislation in the country.

21. All preparatory measures to implement the said two pieces of legislature are in hand so that as soon as the President's assent is received the implementation of these measures starts in full swing. On implementation of these measures, the basic aim of socialism to avoid concentration of wealth in a few hands as enjoined in the directive principles of State policy in the Constitution of India, will be achieved. The ideal of land to the tiller will be realised, thus ensuring growth with social justice. The people of the Pradesh will get opportunity of developing their economy, which was denied to them for centuries.

IMPORTANCE OF FORESTS IN THE ECONOMY OF HIMACHAL PRADESH



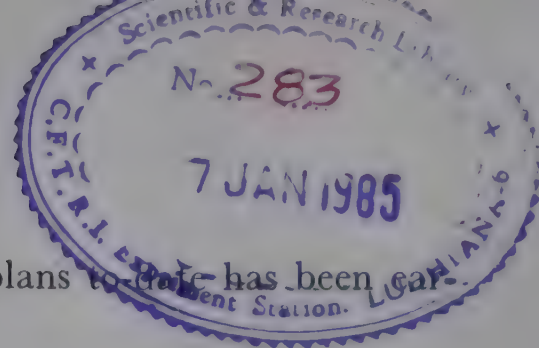
—*Lal Chand Prarthi,*
Forest Minister,
Himachal Pradesh.

Forests are one of the most important natural resources of Himachal Pradesh. They cover an area of 21,654.91 square kilometres and form 38.5 per cent of the total geographical area. The forests of Himachal Pradesh can broadly be classified into two main categories—coniferous and broad-leaved. Amongst the coniferous forests are *chil*, *deodar*, *kail*, spruce and silver fir, etc. Main amongst the broad-leaved species are *sal*, *ban*, oak, *kharsu* oak, *mohru* oak, walnut, maple, birdcherry, poplar, alder, etc. The distribution of different species falls in fairly regular altitudinal distribution. Generally speaking the sequence of different important timber species growing in this Pradesh is *sal*, *chil*, *deodar*, *kail*, spruce and silver fir. Among the oaks, the sequence is *ban* oak, *mohru* oak and *kharsu* oak. The temperate broad-leaved species grow in small pockets on suitable sites. The area of *deodar*, *kail*, fir, *chil* and *sal* is 69,872; 86,444; 1,47,944; 1,14,680; and 26,112 hectares, respectively. *Ban* and *kharsu* oaks cover fairly extensive areas. It is mixed with broad-leaved species growing in the lower areas.

2. The growing stock of coniferous species is about 80 million cubic metres and those of broad-leaved species 14 million cubic metres. The total value of the growing stock can be estimated to be about Rs. 600 crores excluding the cost of land.

3. Forests, as a type of vegetation, afford maximum protection to the soil in particular and all other environmental factors in general. The role played by forests in conserving and thereby regulating water supplies is realized by all.

4. Agriculture has been the mainstay of the development plans taken up in India after independence. Extension and intensification of irrigation has been the most important component of this development programme. Construction of multi-purpose river valley projects for irrigation, power generation, flood control, etc., has come to stay as an accepted technique.



About 20 per cent of the total outlay on different development plans to date has been earmarked for this programme.

5. The forests of Himachal Pradesh protect the catchment areas of five important rivers i.e., Yamuna, Sutlej, Beas, Ravi and Chenab. They thus ensure regular flow of water through these rivers upon which the agriculture and hence the prosperity of plains of Punjab, Haryana, Rajasthan and Uttar Pradesh hinges. Proper management and improvement of land under different uses in such areas is very important. The life of the completed and projected works is intimately connected with the proper management of forests in these catchments.

6. Economic viability of the State is the talk of the day and all out efforts are being made to become economically self-sufficient. Himachal Pradesh is no exception. All the resources at the command of the Pradesh are to be tapped to their fullest extent to achieve the goal of economic self-sufficiency. When we look around for the potential resources which can be tapped, the forests emerge out to be the most important item.

7. The forests even at present are the main source of revenue to the State. This is amply clear from the contribution made by the revenue from the forests, towards the total receipts of the Pradesh for the last three years:—

TABLE 1—REVENUE FROM FORESTS

Year		Revenue of the Pradesh	Revenue from forests	Forest revenue as percentage to total revenue
		Rs.	Rs.	
1969-70	..	17,97,81,000	6,52,35,236	36
1970-71	..	20,64,69,000	7,46,80,499	36
1971-72	..	30,05,42,000	8,16,14,269	27

8. Forests are distributed all over the Pradesh and are an important source of employment for the population. The expenditure incurred on the management of forests is also a very important measure of the part played by it in the economy of the Pradesh. The expenditure incurred on the management of forests during the last three years is tabulated below:—

TABLE 2—EXPENDITURE OF FORESTS

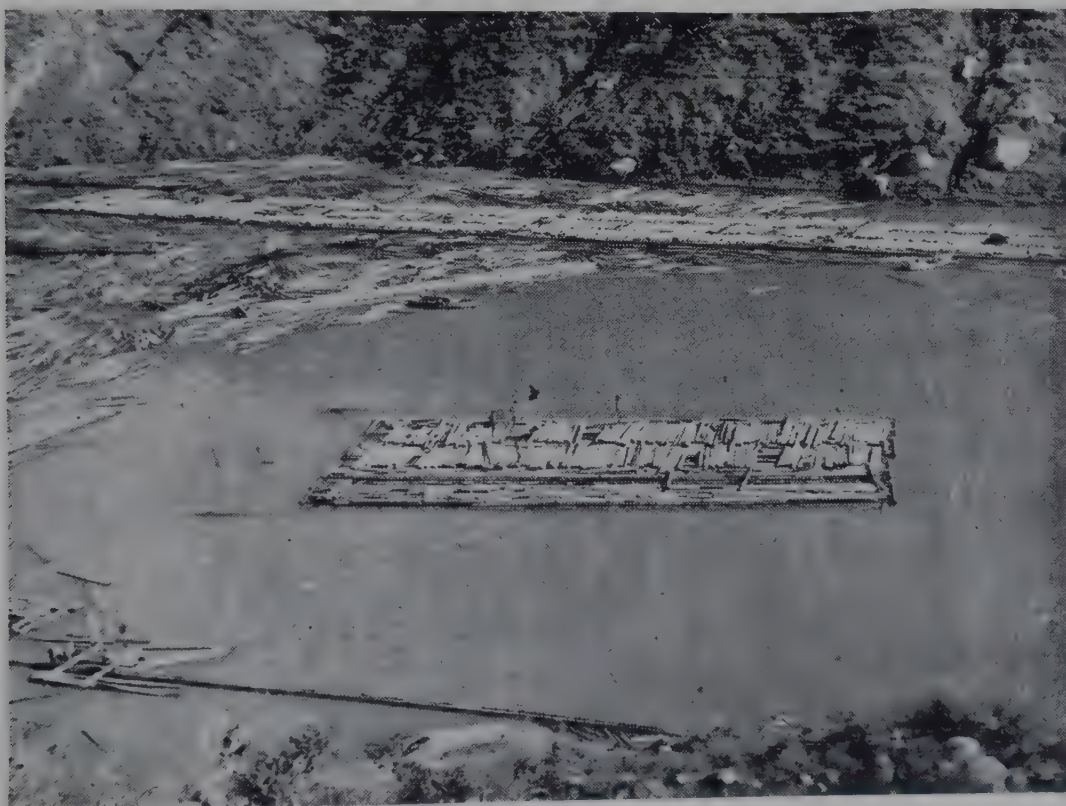
Year		Non-Plan	Plan	119-Capital outlay	Total expenditure
		Rs.	Rs.	Rs.	Rs.
1969-70	..	3,89,86,392	1,56,76,682	12,99,602	5,59,65,676
1970-71	..	5,73,46,233	1,73,36,812	13,99,163	7,60,82,208
1971-72	..	4,22,12,212	1,92,28,211	13,99,275	6,28,39,698



Deodar forest

UTILISATION PATTERN

9. The forests of this Pradesh have till now been exploited to produce mainly constructional timber and railway sleepers. This type of primitive usage resulted in great wastage of valuable wood which could otherwise be utilised to feed wood-based industries to manufacture newsprint pulp, etc., which are in short supply in the country. With these methods of exploitation, about 50 per cent of *deodar*, 40 per cent of *kail* and 30 per cent of spruce and silver fir standing volume could be extracted and utilised. The remaining volume is left in the forests either to rot or to be burnt to clear the place for regeneration. The exploitation is, therefore, to be mechanised to decrease this wastage and to increase utilisation of available resources. With this end in view, mechanised logging was started as part of Third Five Year Plan in Rohru and Kulu Forest Divisions. With the introduction of these improved techniques, outturn of Spruce and Fir has almost doubled, while that of *deodar* and *kail* has been increased by about 50 per cent.



Logs flowing through rivers

10. Besides modern exploitation, setting up of suitable wood-based industries is also essential to ensure better utilisation of available resources and increase employment opportunities for the population. Coniferous wood occurring in this Pradesh are accepted raw material for the manufacture of a number of products like newsprint, long fibered chemical pulp, rayon grade pulp, etc. A newsprint mill of 200 tonnes per day capacity is proposed to be set up at a capital expenditure of more than Rs. 30 crores based on the spruce and silver fir resources of Beas and Sutlej basins. Possibilities of establishing suitable industries utilising available resources of Yamuna basin are also being examined.



Eroded hill and soil conservation

11. The establishment of wood-based industries will greatly augment revenue apart from providing increased employment. It will, thus, go a long way to raise the standard of living of the population. The roads to be constructed for the exploitation of forests will ensure general prosperity of the area by increasing speedy marketability of the agricultural and horticultural produce. Establishment of industries can thus transform the economy of the Pradesh completely.

Mechanised logging



HORTICULTURE

12. Total area under horticulture in the Pradesh is estimated to be about 56,000 hectares which is still increasing year after year. The total annual production of fruits is estimated as 2,40,000 tonnes. The requirement of packing cases is estimated at about Rs. 2.00 crores of 10 kgs. capacity per year consuming about 50.00 lakh cubic feet standing volume. Manufacture of packing cases has come to stay as an established cottage and medium scale

industry in the Pradesh. Huge investment made in the development of horticulture will start paying dividend only when there are adequate arrangements for marketing, packing and transportation. The Government has decided to adopt a uniform policy for the supply of raw material for the manufacture of packing cases in the whole Pradesh to minimise hardship to the producers.

RESIN

13. Out of total production of about 45,000 tonnes of resin in India, Himachal Pradesh produces about 17,000 tonnes. Two Government Rosin and Turpentine Factories at Nahan and Bilaspur are capable of handling about 11,000 tonnes of oleo-resin. Industries are being established both for the processing of oleo-resin, rosin and turpentine oil. These industries have to play a very important part in the overall economy of the Pradesh. The total value of resin produced in the Pradesh is more than Rs. 3.00 crores. It provides employment to more than ten thousand persons both in the extraction of resin and other allied operations.



Rosin & Turpentine Factory, Nahan

14. It is proposed to make full use of the advanced chemical technology for the use of rosin and turpentine oil. Rosin and turpentine derivatives are also to be manufactured. Modified rosin is preferred to ordinary rosin. A large number of useful products like pine oil, pine-tar and longifolenes, etc., are to be manufactured out of turpentine oil. Agreements for the utilisation of turpentine oil have been signed with two parties. Factories are expected to come up soon.

15. Besides the above mentioned large number of industries, there is tremendous scope for the setting up of small scale industries for wood furniture, joinery, pencil slates, textile, bobbin and shuttle, etc. Proposals are being examined for setting up of such units at suitable places. A nucleus has already been created at Shamshi for such manufactures.

MINOR FOREST PRODUCE

16. Apart from resin, Pradesh has vast resources of medicinal plants. These plants are of immense economic value for the manufacture of alkaloids, essential oils, etc. In accordance with the recorded rights, the extraction and utilisation of these plants is confined to right-holders and the middle men are exploiting them very badly. It is proposed to organise this trade and rationalise utilisation by bringing a close liaison between Forest and Health Departments and the Ayurvedic Institute at Jogindernagar.

WILD LIFE AND TOURISM

17. As already pointed out, Himachal Pradesh is bestowed with varied and rich forest wealth which provides tourists and sportsmen immense natural scenic beauty. Its gorgeous mountains covered with thick forests and inter-woven with series of streams and rivers and lakes, combined with a temperate climate, offer ideal recreation for the visitors. The scenic beauty combined with facility for hunting, fishing, camping and hiking, etc., can attract numerous tourists. In fact Himachal Pradesh has already captured a place as a tourist resort in the country. There is ample scope to develop numerous spots as nuclei for development of tourism. Manali, Chail, Khajyar, Renuka are a few of such places. Twenty-four wild life sanctuaries have been created. Two zoological parks are being maintained. Efforts are being made to preserve wild life in the Pradesh. It is proposed to establish a modern Himalayan Zoological Park near about Simla. It will make Himalayan species available for display to the tourists.

FORESTS AND GENERAL POLICY

18. The entire population of Himachal Pradesh is almost rural in character and they are essentially agriculturists. Their requirements for the furtherance of their main occupation of agriculture and horticulture are primarily met from the forests, especially in terms of wood for implements, timber for house construction, grazing and grass for their

cattle, lopping for fodder and lifter. Consequently forests form an integral part of the economic fabric of this population. The importance of forests to the general public can be adjudged from the figures of supply of timber and fuel wood etc., to the right holders as given below:—

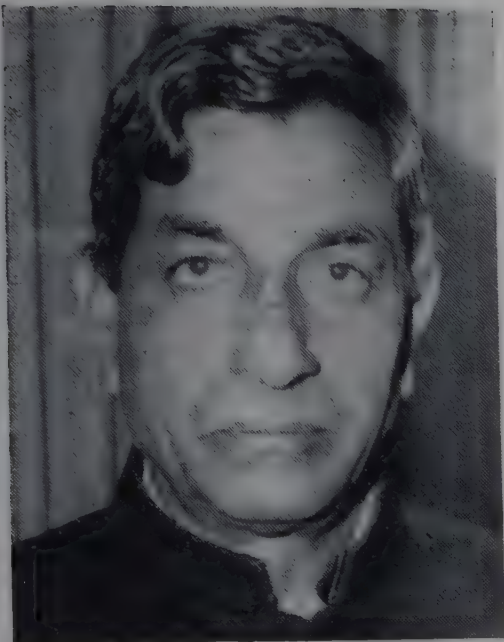
TABLE 3—SUPPLY OF TIMBER AND FIREWOOD TO RIGHT HOLDERS

Year		Timber (Cu. m.)	Fire wood (Cu.m.)
1		2	3
1968-69	..	84,927	54,944
1969-70	..	64,150	50,493
1970-71	..	75,831	64,328

There are about 42.00 lakh heads of cattle of different categories which graze over about 32.00 lakh hectares of waste land available. The grazing incidence is very high. The productivity of the area is low. Serious attempts are being made to introduce stall feeding, increase the productivity and decrease the number of useless cattle.

CONCLUSION

19. The forests are the back bone of the economy of this Pradesh. Their proper preservation and extension is very essential. The national forest policy lays down that forests should cover at least 60 per cent of the total geographical area. All out efforts are, therefore, necessary to increase the area under forests and to check indiscriminate extension of agriculture on land best suited to forestry. This will increase the economic importance of forests for the general well-being of the Pradesh still further.



PLANNING AND PROGRESS IN AGRICULTURE : HIMACHAL PRADESH

—Dr. Salig Ram,
*Agriculture Minister,
Himachal Pradesh.*

Though comparisons are odious, the economy of Himachal Pradesh which is predominantly hilly like that of Switzerland, it may be quite interesting to note that there are many points of similarities other than that of the level of economic development between the two countries. In Switzerland, which is equally a hilly country (area 41,288 sq. kilometres and population 6.2 million) only 11.5 per cent of working population is engaged in agriculture and the per capita income was U.S. \$ 1968 in 1965. Area and population of Himachal Pradesh are 55,673 square kilometres and 3.6 million—the per capita income being Rs. 576 at current prices during 1970-71. The average size of holdings in Switzerland is 17 acres (considered to be low for efficiency). The production of wheat was 1.2 tons per acre (average annual yield for 1961—1964) and the average annual crop of potatoes amounts to 1.3 million tons. In 1961, fruit trees numbered 17.7 million—nearly half of this number was apple trees. The total annual yield of Swiss orchards varies between 500,000 to 12,00,000 tons. The total number of tractors in 1964 was 66,000 vehicles. The forests cover an area of nearly 2-1/2 million acres of which 85 per cent are classed as protective and subject to special regulations. Switzerland has 3,250 miles of rail net work (as against about 200 kilometres in Himachal Pradesh) which climbs as high as 11,500 feet. The total road net-work in kilometres was 59,033 in 1970 (as against about 10,000 kilometres in Himachal Pradesh). Switzerland through its increased and rapid industrial activity and expansion has made immense progress as against almost negligible industrial development in Himachal Pradesh. At the end of the last century about 38 per cent of the working population in Switzerland was engaged in agriculture which came down to 11.5 per cent in 1960. In Himachal Pradesh even now about 76 per cent of the population is directly engaged in agricultural pursuits. Not unlike Switzerland, Himachal Pradesh also has immense economic potential, the only difference being that it has so far not been properly exploited. In the succeeding paragraphs, the planning and progress achieved in the domain of agriculture in Himachal Pradesh, has been discussed.

IMPORTANCE OF AGRICULTURE

2. The significance of agriculture in the economy of Himachal Pradesh is amply borne out by the fact that it is by far the largest single 'industry' in the State and the main occupation of the people. In Himachal Pradesh, agriculture provides direct employment to about 76 per cent of the total working population. As a matter of fact, agriculture here is not merely an occupation, but an established tradition and an accepted way of life. Agriculture happens to be the premier source of State Income (gross domestic product) also. According to the available estimates, in Himachal Pradesh, agriculture alone (excluding animal husbandry, forestry and fishery) accounts for nearly 40 per cent of the total gross domestic product. If these sub-sectors of agriculture are also taken into consideration, this percentage will go up to more than 60. According to 1971 census, 36.8 per cent of the total population of Himachal Pradesh has been classified as workers as against 33.5 per cent for the country as a whole. With such a large percentage of people depending upon agriculture, there is naturally an excessive pressure on land and consequently sub-marginal land is also being brought under the plough. The menacing problem of soil erosion is rampant and every year an unestimated volume of valuable soil is washed away by rains. The per capita holding of arable land is less than one hectare and to stretch the land for cultivation under mountainous conditions is extremely difficult, if not impossible. Under these circumstances the return from agriculture to farmers is meagre. Of course, areas which have taken recourse to horticulture and production of specialised seeds and vegetables have great economic potential but on account of general lack of means of communications and other infra-structure facilities, it has not so far been possible to develop Himachal Pradesh into a self-generating economy. Under the circumstances, except for in valley areas, there is limited scope of extensive cultivation and agricultural production can only be stepped up by intensive methods by adopting scientific cropping pattern.

INDEX OF AGRICULTURAL PRODUCTION

3. The all-time high production of *rabi* cereals during 1971-72 has boosted up the overall index of agricultural production to 154.5 as against 148.1 in 1970-71, whereas the index number of area under all crops remained constant at 107.8 during these two years. The index numbers of area under principal crops, agricultural production and productivity

re given below:—

TABLE 1—INDEX NUMBERS OF AGRICULTURAL PRODUCTION AND AREA

Year	Index numbers (1956-57=100)					
	Area		Production		Productivity	
	Foodgrains	All crops	Foodgrains	All crops	Foodgrains	All crops
	2	3	4	5	6	7
1967-68	.. 106.1	107.6	136.7	135.5	128.8	125.9
1968-69	.. 106.3	107.2	146.9	148.7	138.2	138.7
1969-70	.. 104.4	105.8	139.1	145.3	133.9	137.3
1970-71	.. 106.9	107.8	144.7	148.1	135.4	137.4
1971-72	.. 107.2	107.8	157.6	154.5	147.0	143.3

4. It may be worthwhile to mention here that according to the compound growth rates of production computed by the Ministry of Food and Agriculture, Government of India, Himachal Pradesh has achieved the highest compound growth rate in the production of foodgrains (12.4) among all the States and Union Territories during 1960-61 to 1970-71. One of the reasons for this higher growth rate is the continuous extension of area under high yielding varieties in this Pradesh. The area under such varieties was 91.02 thousand hectares in 1969-70 and it increased to 201.00 thousand hectares during 1971-72.

PLANNING

5. In Himachal Pradesh, there are hardly any industries worth the name and the majority of the agricultural persons eke out laboriously a difficult existence for a meagre livelihood by tilling the poor, hard, stony, denuding and thin surfaced soils. Steep gradients, deep thick forests, rains, and snowfalls further aggravate the problem. The climate, soil, rainfall and temperature in different areas are quite divergent resulting in varying agro-economic practices, cropping patterns, times of sowing, harvesting and marketing, etc., are different. Prior to the emergence of Himachal Pradesh as an integrated unit, no development programmes of any sort were undertaken and as such the farmers were quite ignorant of the agricultural programmes in various parts of the country. Agro-economic practices were inefficient and there was no scientific research data to guide future planning. The economic development of the Pradesh began with the commencement of the First Five Year Plan. In the first three Five Year Plans, priority was given to transport and communications (roads) by allocating more than one-third of the Plan outlay for this sector. In the three annual Plans, 25 to 30 per cent of the expenditure was incurred on this sector. On agricultural programmes,

the Government increased the percentage of allocation of Plan outlay from the Third Five Year Plan. There has been an increasing share of expenditure on irrigation and power and the Government has been endeavouring to tap the natural resources of hydel power. Outlay for agricultural programmes in Himachal Pradesh under the various Plans is as follows:—

TABLE 2—SHARE OF AGRICULTURE IN TOTAL PLAN OUTLAY

Plan	Outlay (Rs. Crores)	
	Agricultural Programmes	Total for all Sectors
First Five Year Plan ..	0.7 (13.2%)	5.3
Second Five Year Plan ..	2.5 (15.6%)	16.0
Third Five Year Plan ..	7.7 (22.8%)	33.8
Fourth Five Year Plan ..	30.0 (29.6%)	101.4
Fifth Five Year Plan (P) ..	50.0 (19.2%)	260.0

P—Provisional.

YIELDS

6. The momentum created by the introduction of planned development has been maintained with added emphasis on the development of horticulture, increasing agricultural production, initiation of agricultural marketing and soil conservation schemes and crop and horticulture research. The planned development has been able to transform the agricultural economy of the Pradesh as is evidenced by the table given below:—

TABLE 3—AVERAGE YIELD OF IMPORTANT CROPS IN HIMACHAL PRADESH AND ALL INDIA

Commodity	Average yield in kilograms per hectare in Himachal Pradesh							
	1968-69		1969-70		1970-71		1971-72	
Rice ..	1,026	(1,076)	1,172	(1,073)	1,178	(1,123)	1,055	(1,145)
Wheat ..	912	(1,169)	837	(1,209)	815	(1,307)	1,185	(1,382)
Maize ..	1,604	(997)	1,733	(968)	1,857	(1,279)	1,342	(892)
Potato ..	4,494	(9,011)	4,768	(8,006)	4,863	(9,976)	3,582	(9,738)

N.B.—Figures in brackets denote all-India averages.

STRATEGY

7. The strategy of development for agriculture conceived for the Fourth Five Year Plan is to resort to intensive agricultural production programme in the valley areas, multiple cropping programme, development of cash crops, extensive soil conservation measures, agricultural education and training, etc. The past agricultural strategy of concentrating on

irrigated areas has tended to create imbalances between irrigated and un-irrigated areas as also among the groups of farmers in the region. However, with varying agro-climatic regions, varying degree of irrigation potential, etc., Himachal Pradesh now needs a new approach not only for each region but also for each class of farmers. This requires re-orientation in the approach which should be area-based to bring about an integrated development of all areas including all groups of farmers. For this purpose, areas for agricultural development could be classified as (1) areas having irrigation facility, (2) areas having irrigation facility but inadequate rainfall, (3) areas with no irrigation and less rainfall, and (4) areas with no irrigation or rainfall. Small farmers constitute the bulk of farming community in Himachal Pradesh and they require all attention of our agricultural development programme. The ameliorative steps taken in this direction have been discussed in a subsequent paragraph.

8. A glimpse of the following work programme of the Agriculture Department, Himachal Pradesh for 1973-74 would reveal the strategy to achieve self-sufficiency in the production of foodgrains including the maintenance of sufficient buffer stocks in Himachal Pradesh:—

TABLE 4—WORK PROGRAMME FOR 1973-74

Item	Unit	Work programme for 1973-74
1. Distribution of seed of high yielding varieties:		
(a) Wheat	.. '000 tonnes	2.50
(b) Maize	.. '000 tonnes	0.30
(c) Paddy	.. '000 tonnes	0.20
2. Area to be covered under high yielding varieties:		
(a) Wheat	.. '000 hect.	200.0
(b) Maize	.. '000 hect.	60.0
(c) Paddy	.. '000 hect.	55.0
3. Distribution of fertilizers:		
(a) Nitrogenous	.. '000 tonnes	8.90
(b) Phosphatic	.. '000 tonnes	4.40
(c) Potassic	.. '000 tonnes	2.50
4. Preparation of compost:		
(a) Rural compost	.. lakh tonnes	15.00
(b) Urban compost	.. '000 tonnes	6.00
(c) Area to be covered under green manuring	.. '000 hect.	28.34
5. Area to be covered under plant protection measures	.. '000 hect.	220.00
6. Area to be covered under multiple cropping (additional)	.. '000 hect.	2.50
7. Production of:		
(a) Foodgrains	.. lakh tonnes	13.00
(b) Potato	.. '000 tonnes	97.00
(c) Vegetables	.. '000 tonnes	83.00
8. Soil Conservation measures	.. '000 hect.	2.50

IRRIGATION

9. It is also a well known fact that the problem of providing irrigation facilities in hilly areas is of an entirely different nature. The gravity of the problem is revealed by the following figures:—

TABLE 5—PERCENTAGE OF CULTIVATED AND IRRIGATED AREA (1968-69)

State 1	Percentage of cultivated area to total reporting area 2	Percentage of irrigated area to cultivated area 3
Himachal Pradesh	20.9	14.4
Haryana	74.3	40.1
Punjab	78.6	67.3

10. With such meagre irrigation facilities, the possibilities of development are quite limited. Apart from gravity flow, in most of the places irrigation facilities can be provided only with the help of high lift irrigation schemes. Unless specific steps are taken to earmark adequate resources for the development of irrigation facilities, development of the agricultural sector in these areas cannot make any effective headway. Moreover, in most areas, gravity flow irrigation is not possible because the agricultural lands are higher than the source of water and perhaps, lift irrigation is the only answer. For minor irrigation programme, an amount of Rs. 50.00 lakhs was earmarked during 1972-73. While in 1973-74, a sum of Rs. 55 lakhs is expected to be spent on minor irrigation schemes.

FERTILIZERS

11. Chemical fertilizers play a vital role in increasing agricultural production, particularly of high yielding varieties which are fertilizer responsive. Vigorous efforts have been made through the extension staff to popularise the use of chemical fertilizers. In Himachal Pradesh, no sales tax is levied on fertilizers and on the other hand, subsidy on internal transport charges from rail head/out agency to approved distribution centres over and above Rs. 10 provided under the distribution margins is shared by the Central and State Governments on 50:50 basis. However, the consumption of fertilizers in Himachal Pradesh is quite

as is evidenced by the figures given below:—

TABLE 6—CONSUMPTION OF FERTILIZERS

(Kg. per hectare)

State	1969-70	1970-71
A—Per unit of cropped area		
Himachal Pradesh ..	4.16	6.34
Punjab ..	33.67	40.31
Haryana ..	11.72	17.28
All -India ..	12.63	13.67
B—Per unit of agricultural land		
Himachal Pradesh ..	1.44	2.29
Punjab ..	33.57	40.24
Haryana ..	11.62	17.02
All-India ..	11.32	12.30

12. It is, thus, obvious that the fertilizer consumption in Himachal Pradesh has to be stepped up. With this aim in view, it is proposed to set up a granulated fertilizer producing factory at Nalagarh in Solan district.

STORAGE

13. Fertilizer requirement by 1973-74 is expected to be of the order of about 3 lakh tonnes. Such expanding needs also call for solving the most important storage problem of the State concerning inputs for the farmers. Inputs inspite of best efforts reach the farmers late and emphasis has to be given on regular supply of fertilizers at the farm level. Though there is a net work of godowns of Agriculture Department, they are quite inadequate. The need of the day is, therefore, to construct godowns at all block headquarters primarily for storage of fertilizers. The Fertilizer Corporation of India had so far not established any godowns in Himachal Pradesh. For buffer stocking of fertilizers at strategic points to meet the requirements of remote and snow-bound areas, some storage capacity must be put up by the Fertilizer Corporation of India. It will, therefore, be appropriate to provide for at least storage for 50 per cent of the fertilizer consumption so that the farmers get their requirement in time and without difficulty. There is also no fertilizer factory in the State and hence the State has to look to other States and the Central pool for its requirements. The current estimated storage capacity of fertilizers in Himachal Pradesh is about 45,100 tonnes—25,100 tonnes by the Co-operative Societies and 20,000 tonnes by the State Agriculture Department. This by any norm falls short of the total requirement and in order to eliminate avoidable wastage in transport, etc., the capacity to store fertilizers should be extended to village level.

THE PROBLEM

14. The basic objective of economic planning is the evolution of an economy which can in course of time, develop enough vigour for self-sustained growth. It is, therefore, incumbent upon those concerned with planned development to identify those spheres of economic activity that are most vital for the evolution of a self-sustaining economy and to revitalise and revalue the organisations concerned with the development of these activities. Himachal Pradesh is a typical hill area. The terrain of the Pradesh is rugged, bulk of the population finds its sustenance from agriculture and horticulture in the absence of any worthwhile industrial activity. For the development of this area, a plan specifically suited to the needs of the hill areas has to be provided. The Plan priorities which are applicable to the plain areas of the country require certain basic modifications in their application to the hill area. Development of agriculture primarily requires certain infrastructure. In the plains emphasis is laid on food production and production of crops like sugarcane, cotton, etc. The wholesale markets are generally situated in the vicinity of producing centres, and transport of agricultural inputs such as fertilizers, seeds, etc., is comparatively easy. In the hills the story is entirely different. The villages and the fields are so located that inputs as well as disposal of marketable surpluses have to be, in the absence of roads, transported on human backs which increases the cost of production thereby making the entire activity uneconomic. The yield per acre of foodgrains in the hilly region as compared to the plains is lower on account of the soil conditions, short cropping season and to a certain extent due to single crop system in certain higher elevations. Food production except in the valley areas is meagre. Hills have, therefore, to specialise in items which cannot be grown in the plains or which can be grown off-season and transported to the consumption centres in the plains. This calls for specialised production of mushrooms, ginger and off-season vegetables. The State Government is already apprised of this problem and is taking adequate steps in this direction.

INSTITUTIONS

15. The institutions with which a villager comes into direct contact are the block development agency and the village co-operative society. The block development agency is responsible for providing to the village basic amenities such as water supply, rural roads, elementary education facilities, elementary medical aid, etc. It is also responsible for stimulating the interest of the farmer in modern means and methods of cultivation, in the use of fertilizers, pesticides and insecticides. This is achieved through an extensive system of field demonstrations and provisions of subsidy on the purchase of essential agricultural inputs. The block development agency also ensures timely collection and distribution of agricultural inputs such as good seeds, fertilizers, etc., and also helps in the construction of small irrigation *kuhls* (channels), pavements, etc. Under the rural manpower programme which is in vogue in 38 effective blocks in Himachal Pradesh, the block development agency has undertaken extensive construction of rural works such as roads and irrigation *kuhls* (channels). The aim of this programme is to make use of the un-utilised rural manpower. The block development agency also runs a programme of applied nutrition which is currently in vogue in 21 blocks.

HORTICULTURE

16. With the added emphasis on fruit production in Himachal Pradesh, it is estimated that the apple production will multiply manifold by 1974. This is bound to impart a new look to the planning in so far as the establishment of a net work of cold storages in the principal markets all over India is concerned. One cold storage each at Delhi and Bombay have been constructed and steps are also being taken for construction of more cold storages at different commercial centres. Setting up of fruit processing industries on a large scale in the State as well as export of apples to foreign markets will also have to be stepped up. In 1948, total area under horticulture in Himachal Pradesh was 405 hectares which rose to 44,329 hectares in 1970-71. Almond growing is also receiving due attention of the orchardists in Himachal. There is also an abundant growth of a large variety of inferior fruits like wild pear, wild peach, wild apricot, wild olive, etc., in Himachal. With a view to convert these trees into superior variety, top working with the superior variety has also been undertaken. The following table gives the trend of area and production of fruits in Himachal Pradesh:—

TABLE 7—AREA AND PRODUCTION OF FRUITS

Year	Area under fruits (hectares)	Estimated fruit production (lakh tonnes)
1	2	3
1950-51 (Pre-Plan)	.. 405	..
1955-66 (I Plan end)	.. 1,214	0.07
1960-61 (II Plan end)	.. 4,512	0.19
1965-66 (III Plan end)	.. 22,257	0.37
1970-71	.. 44,329	1.49
1971-72	.. 48,987	1.78

Agro-Industries Corporation was set up during 1970-71 with a view to help the farmers of the State. The Corporation renders assistance in the marketing of agricultural and horticultural produce and also in setting up industries based on these items. The Corporation has been able to procure 233 tractors of which 186 have been distributed among the farmers during 1971-72. The Corporation has also rightly taken up the work of transit and forwarding of apple boxes in collaboration with the Himachal Pradesh Fruit Development Board. A World Bank Project for the marketing and processing of apples in Himachal is also under investigation. The project envisages the establishment of marketing and processing infrastructures viz., mechanized packing stations, cable ways for transportation of fruits, cold storages, warehouses, etc. All these are steps which would ultimately benefit the farmers. However, in the field of horticulture, the imperative need is to provide adequate marketing facilities and to completely eliminate the intermediaries who fleece the poor producer.

PROJECTS

17. The Indo-German Agricultural Project which started functioning in 1962-63 with the collaboration of Federal Republic of West Germany in Mandi district of the Pradesh aims at increasing the food production by providing to farmers all essential inputs like improved seeds, fertilizers, implements, credit and plant protection equipment. Besides this, it has taken a lead to encourage mixed farming. Not only that mixed farming has been made a way of life of the farmers there, but also the results accruing from the use of high yielding varieties of wheat and maize in this district have opened the eyes of the farmers to new opportunities. Other parts of the Pradesh have also benefited by this experiment. The project was extended also to the district of Kangra in 1967 where entirely a new picture of prosperity through mixed farming is emerging. Valley areas and foot hills of the Pradesh are virtual granaries of the Pradesh. A big plan has been drawn up to cover this entire area with the high yielding varieties and the extension service to make farmers conscious of scientific agriculture has been geared up. Provision of agricultural inputs at the very doors of the farmers is the main aim of this campaign. In addition, valley area programmes are also in operation which include cultivation of high yielding varieties in Kangra, Sirmur, Bilaspur, Kulu, Simla, Chamba and Mahasu districts.

AGRICULTURAL CREDIT

18. The number of agricultural credit societies was 2,537 on 30th June, 1972. The membership of these societies was about 4.38 lakhs and share capital Rs. 210 lakhs. These co-operatives advanced loans to their members for various agricultural purposes to the tune of Rs. 471.24 lakhs during 1971-72. To meet the increasing credit needs of the farmers, the system of crop loan was introduced in Himachal Pradesh since *kharif* 1969. Under this system the loan is being given on the basis of crops and not areas. During 1970-71, crop loans amounting to about Rs. 158 lakhs were advanced by the three co-operative banks through the co-operative societies.

SMALL FARMERS AND MARGINAL FARMERS

19. In order to extend the benefit of the green revolution to the small farmers, the scheme of 'Small Farmers Development agency' (SFDA) introduced by the Government of India has been taken up by the State Government in Sirmur district in all the development blocks and provides for a sum of Rs. 150 lakhs during the Fourth Five Year Plan period. Under this scheme, a comprehensive approach has been made to provide adequate credit facilities to small farmers having holdings from 1 to 7.5 acres of land for purchase of agricultural inputs and other developments. The financial assistance has been limited to 75 percent loan and 25 per cent subsidy. So far credit facilities have been extended to 23,000 small farmers. Similarly, 'Marginal Farmers and Agricultural Labourers' (MFAL) scheme is in operation in Solan district of Himachal Pradesh and provides for a sum of Rs. 100 lakhs

during the Fourth Plan period. Under this scheme, credit facilities will be extended to small farmers and agricultural labourers having holdings less than 2.5 acres for various developmental purposes. Financial assistance under this programme is given in the shape of $33\frac{1}{3}$ per cent subsidy and $66\frac{2}{3}$ per cent loan. An amount of Rs. 40 lakhs is expected to be utilised under this programme during 1972-73.

FOOD SUFFICIENCY

20. The trend in the production of principal crops in Himachal Pradesh is given below:—

TABLE 8—PRODUCTION OF FOODGRAINS IN HIMACHAL PRADESH

Crops 1		Production in '000 tonnes during		Percentage rise 4
		1966-67 2	1971-72 3	
1. Rice	..	81.12	103.58	+27.7
2. Maize	..	360.49	330.31	—8.4
3. Wheat	..	172.15	394.54	+129.2
4. Barley	..	44.59	65.36	+46.6
5. Ragi and millets	..	19.14	22.20	+16.0
SUB—TOTAL		677.49	915.99	+35.2
6. Pulses	..	13.95	28.61	+59.4
TOTAL—FOODGRAINS		695.44	944.60	+35.8
Cash Crop:				
7. Potatoes	..	53.31	49.53	—7.1

21. The production of total foodgrains has risen by 35.8 per cent and was of the order of about 945 thousand tonnes in 1971-72. Let us now examine the level of food sufficiency in Himachal Pradesh. The following approximations have been made in working out the level of food sufficiency:—

- | | | |
|--|----|---------------------|
| 1. Total foodgrains production | .. | 945 thousand tonnes |
| 2. Foodgrains procured by State Government through F.C.I. | .. | 5,518 tonnes |
| 3. (a) Population (adults at the rate of 86 per cent of total population taken as 34.60 lakhs) | .. | 29.76 lakhs |
| (b) Floating population (tourists, etc.) | .. | 1.50 lakhs |
| (c) Total population considered | .. | 31.26 lakhs |

4.	Allowance for seed, feed and wastage at the rate 30%	284 thousand tonnes
5.	Total quantity of foodgrains available for human consumption	.. 667 thousand tonnes
6.	Requirements of foodgrains (at the rate of 666 gms per head per day)	.. 760 thousand tonnes
7.	Deficit	.. (—)93 thousand tonnes

22. From the above, it is obvious that the estimated deficit on the basis of above assumptions in Himachal during 1971-72 was to the tune of 93 thousand tonnes. Due to good crop during 1972-73, this deficit has reduced to 60 thousand tonnes and it is expected to be wiped out completely by the end of Fourth Plan period since the Pradesh Government is already engaged in implementing production-oriented programmes. Himachal Pradesh meets its additional requirements of foodgrains from central reserves and through free trade channel from neighbouring States.

CONCLUSION

23. From the foregoing discussion it is obvious that Himachal Pradesh has made considerable progress in the field of agriculture. Though at present deficit in the production of foodgrains, the State can by resorting to intensive farming and multiple cropping become self-sufficient in the production of foodgrains in near future. The farmers, the planners, the administrators and the experts are well aware of these problems and are working in right earnest to boost up the agricultural production.



SOCIO-ECONOMIC PROBLEMS OF HAMIRPUR DISTRICT

—*Babu Ram Mandial,*
Chief Parliamentary Secretary,
Himachal Pradesh.

Himachal Pradesh was created on 15th April, 1948, but it could achieve a proper shape only on November 1, 1966, when hilly areas of Punjab were merged with it as a result of the re-organisation of the State of Punjab. Later it attained the Statehood on January 25, 1971. The re-organisation of the districts of Himachal Pradesh is also another milestone in the history of the Pradesh. The re-organisation of the districts took place on September 1, 1972 as a consequence whereof two more districts were created, namely, Hamirpur and Una mainly as a result of trifurcation of the erstwhile Kangra district. Also from the then existing districts of Simla and Mahasu, new districts of Simla and Solan were formed respectively. The re-organisation of the districts has not only brought about the administrative convenience but also the long cherished desire and fulfilment of the democratic will of the people. With this, great vistas have been opened for the around development of the areas of the new districts.

2. The people of Hamirpur have been demanding the creation of a separate district for them much before the integration of the hilly areas of the Punjab in Himachal Pradesh. Hamirpur Sub-Division was the biggest sub-division of the Pradesh in so far as the population is concerned. Several districts have lesser population than Hamirpur Sub-Division which is bigger in area with respect to the erstwhile Simla district and the present Bilaspur district. The distance between Hamirpur and Dharamsala is about 100 kilometres. It was very difficult for the people of Hamirpur to reach Dharamsala being the District Headquarters of their district. Generally, the boat bridge at Nadaun is dismantled during the rainy season and it is extremely difficult for the people of the area to go to Dharamsala. At the same time the district authorities found it difficult to focus attention on this far-flung area. These difficulties have now been eliminated. No area of the district will be more than 30 to 40 kilometres away from the District Headquarters at Hamirpur. There are also developmental schemes which have concern only with the district as a unit. Crash programme is a case in

point. Now, with the formation of a separate district for the people of Hamirpur, the advantage of full-fledged district will also accrue to it.

AREA AND POPULATION

3. The new district has an area of 1.6 thousand square kilometres, and is composed of two tehsils, namely, Hamirpur and Badsar. Dhundla Block of Hamirpur tehsil was excluded and two patwar circles viz., Kurna and Shantla of Dehra tehsil were merged in Hamirpur Sub-Division and, thus, the new district was formed. The population of the district according to 1971 Census is 254 thousand persons and this district occupies fifth position among all the twelve districts in the State. Himachal Pradesh has an average density of 62 persons per square kilometre. The number of persons per square kilometre in Hamirpur district is 159.

4. In Himachal Pradesh there are 938 females per thousand males according to 1961 Census. The corresponding figure for the Indian Union is 941. In Hamirpur district, however, the corresponding ratio is 1,075 females after every 1,000 males, which is the highest. This means that Hamirpur district sends out males in large number for employment outside the district particularly as recruits in the army.

HISTORICAL AND SOCIAL BACKGROUND

5. Hamirpur district derives its name from Raja Hamir Chand of Kangra who built a fort here. Pine forests and lower hills scenery are its attractions. The district is bounded on the north-east by Kangra and Mandi districts, south-east by Ropar district (Punjab) and Bilaspur district and on the north-west by Una and Kangra districts. It is purely Hindi speaking area although Kangri is by far the mother tongue of about 95 per cent of the population. Locally, the dialect is known as *Pahari*. In addition to Hindi and Urdu scripts, *Lunde* and *Tankri* scripts are also in vogue. Hindi script is commonly used by all classes in correspondence. Same is true with Urdu as well. *Lunde* and *Tankri* are used by the business community. Roman script is usually used by the ex-soldiers.

6. The majority of the population consists of Hindus. The Brahmins cover a majority of the population in the district and are second only to Rajputs. *Ghirths* and *Rathis* also live in the area. They are essentially an agricultural class, and prevail through Palampur tehsil of Kangra district and Hamirpur district. In all tracts of irrigated lands, wherever the soil is fertile and the produce is exuberant, the *Ghirths* abound, while in the poorer uplands, where the crops are scanty and the soil demands severe labour, the *Rathis* predominate. The *Rathis* generally are a robust and handsome race. Brahmins who do not use the plough are known as pure Brahmins and the second category who use the plough are termed as low Brahmins. Rajputs are in majority in the district. They generally depend upon agriculture and army service. As Kangra district is known as sword arm of the Pradesh so is the case with Hamirpur district. A large number of persons have joined the armed forces and have

won fame for the State by winning gallantry awards during Indo-Pak wars. The following were awarded gallantry awards in Hamirpur district during December, 1971 war:—

1. Hav. Lekh Raj (No. 2440669) of village Dhamani, P.O. Thaklari, District Hamirpur (VC);
2. Mech. Megh Nath Sangal (No. 50896) of village Jhareri, P.O. Kangoo, District Hamirpur (VC);
3. Maj. Punjab Singh (IC-16783) of village Sakandar, P.O. Tikkar, District Hamirpur (VC);
4. Gdms. Brij Lal (No. 13061050)—Posthumous—of village Lokhar Ropri, P.O. Ropri, District Hamirpur (VC); and
5. Hav. Rumesb Kumar (No. 3943836)—Posthumous—of village Tikkar, P.O. Kangoo, District Hamirpur (VC).

7. Hamirpur is well known for its martial traditions and thousands of its valiant sons are serving in the defence forces of the country. The establishment of the district will surely help in ironing out many problems of the servicemen.

8. The other two communities are the *Vaish* and *Harijans*. *Harijans* belong to some of the castes like *domnas*, *julahas*, etc., while *Vaish* are from the business community. The caste system is gradually dying down with the passage of time and there is no water tight compartment in respect of the cultivation of land. All the above castes also cultivate land and in the semi-urban areas, the system seems to be non-existent.

HAMIRPUR VILLAGES

9. The appearance of Hamirpur villages is unique. As against compact villages of the Punjab plains, in Hamirpur there are groups of two or three homesteads, scattered in picturesque localities. Each man lives upon his own holding chosen as site for his cottage in some selected spot which is open to sun and yet sheltered from the mountain winds. The dwellings of the Rajputs can easily be singled out from the rest, for they mostly select elevated and isolated sites for their houses.

DWELLINGS

10. The houses of the peasantry are scattered in pleasant and picturesque localities, not congregated into villages. Every man resides upon his own farm and builds his cottage in some selected spot, open as a rule to the sun, and yet sheltered from the wind. The house is of sun dried bricks, having generally two storeys. The inmates occupy the lower floor, the upper being used during the greater part of the year as lumber room or store room for

grains. During the rains the upper room is used for cooking and in many cases as a sleeping room. The upper roof is generally made of thatch—thick, substantial and neatly trimmed, but of late slates have been extensively used. The out-side walls are plastered with red and light coloured earth. The front space is kept clean and fresh. On one side of the cottage is the shed for cows and bullocks and on the other building containing the sheep and goats. The thatch of the cottage is removed every third year; and in parts where grass is plentiful, a fresh covering is added annually. The entrance is usually to the east or to the south, but there is no general law.

11. All marriages are performed strictly in accordance with the Hindu tradition and are generally held within the caste. This custom conforms to such a custom in other parts of the State. However, large sums are wasted on marriages. Also the system of dowry is prevalent in all the sections of the community. The dowry is given according to the status of the family. This system is, however, responsible for the rural indebtedness and needs to be curbed by social reforms.

12. A good many fairs are held in the district which form a part of amusement to the people. The innocent people of the district find natural distraction from their hard, oppressive and humdrum life in fairs and festivals which mostly concerns the worshiping of *devis* and *devtas*. Both men and women participate in the fairs in their best costumes. Wrestling matches (locally known as *Chinj*) are also held in different parts of the district and people visit the fairs in great number. In some of the fairs, the bullocks are sold and purchased. The most important fair is Sujanpur Holi held during *Phagun* continuously for eight days. It is an exuberant festival, a blend of glowing sensuousness and religious mysticism. Men and women sing the joyous songs of spring and throw orange coloured water at one another. Hamirpur wrestling is also held during 15th *Phagun* every year. The chief festivals of this district are *Lohri* and *Diwali* which are celebrated with much pomp and show.

13. A very marked feature of the district is the *Deot Sidh* stones to be seen by every way side and before thousands of cottages. The stones are in the form of the impress of the two feet. The headquarters of the worship of *Deot Sidh* is in Hamirpur district near Chakmoh village; and from there the worship spreads all over the neighbourhood. A light used to appear over the cleft and hence the word *deot* or *deva*. This is an important pilgrimage centre in the district. Thousands of people come from many parts of the country to pay homage to Baba Deot Sidh and also sacrifice the goats on their visit as offering.

14. A mention may also be made about Kangra paintings. Hamirpur is not only famous for glorious military traditions, but also famous for its school of painting. Kangra paintings at a later stage flourished at Tira Sujanpur and Nadaun under the patronage of Raja Sansar Chand (AD 1775-1823). Even today the temples of Narbadeshvar, Gauri Shankar and Murli Manohar built by him at Sujanpur Tira bear a testimony to the richness of work. There were numerous paintings in these temples, but due to the ravages of time and depredations of art thieves only a few remain today.

ECONOMIC PROBLEMS

15. The hilly regions have remained backward essentially because the bulk of the population is dependent on a single activity viz., agriculture. Due to the pressure of population even the inaccessible areas have been brought under plough and the slopes, which are suitable for forests have been cut into terraces for cultivation. This has caused deforestation in many areas and consequently soil erosion has become a very serious problem. Even the farm lands which are capable of yielding high income if put on valuable crops, such as fruits and vegetables, are used to grow relatively low value crops like inferior foodgrains in order to meet the food requirements of the local population. Such an uneconomic utilisation of land has been forced on this region primarily because the population and its requirements of foodgrains have steadily increased over the past several decades. Secondly, the urgency for self-sufficiency in the production of foodgrains has been caused by inadequate means of transport and communication facilities which render the inputs of foodgrains both uncertain and expensive. Therefore, for a speedy economic development of the region, emphasis will have to be mainly on increasing the transport facilities and on ensuring a more efficient utilisation of land resource. These measures can only convert the present economic stagnation of the area into a state of high priority.

AGRICULTURE

16. *Land Utilization.*—The land utilization statistics for the year 1971-72 are given below:—

TABLE 1—LAND UTILIZATION STATISTICS OF HAMIRPUR

Item	1971-72 (P) (in hectares)
1. Total geographical area (by village papers)	1,14,409
2. Forests	21,119
3. Barren and unculturable land	19,665
4. Land put to non-agricultural uses	12,595
5. Culturable waste	7,390
6. Permanent pastures and other grazing lands	4,617
7. Land under miscellaneous tree crops and groves not included in net area sown	—
8. Current fallows	10,873
9. Other fallows	—
10. Net area sown	38,150
11. Net irrigated area	1,491
12. Gross irrigated area	2,517

Source:—District Land Records Office, Hamirpur.

P—Provisional.

17. It would be revealed from the above table that the cultivated area (i.e., net area sown plus current fallows) is only 42.8 per cent of the area of the district. The land not available for cultivation (32,260 hectares) and other unculturable land (12,007 hectares) comes to 38.7 per cent of the total area whereas forests (21,119 hectares) constitute only 18.5 per cent. Thus on account of a very high percentage of population depending on agriculture, the pressure on land is severe. Out of the total cropped area, only 2,517 hectares i.e., 3.2 per cent is irrigated, mostly by private *kuhls*. The soil at most of the places is rocky and the yield of crops is low.

18. The forests occupy an important place in the economy of the State and so is the case with Hamirpur district. In 1971-72, Hamirpur Forest Division extracted 2,46,000 cft. of timber and 11,000 quintals firewood worth over Rs. 4.36 lakhs. Resin from *chil* is extracted departmentally. The sale of resin fetched a revenue of Rs. 39,23,067 during 1971-72. As a measure of soil erosion, the Forest Department planted 3,98,074 plants in an area of 1,820 acres during 1971-72.

19. As for irrigation, the Government is taking keen interest in providing irrigational facilities in the district. The following irrigation schemes have been completed at sizeable costs:—

TABLE 2—COMPLETED IRRIGATION SCHEMES

Scheme	Culturable commanded area (in acres)	Cost (Rs.)
1. Lift Irrigation Scheme (LIS) at Nadaun (completed prior to re-organisation of the State of Punjab)	200	2,08,566
2. LIS at Rail (completed in 1970-71)	280	2,08,140
3. LIS at Ambtar (completed in 1971-72)	180	1,79,800

The following three lift irrigation schemes are also in progress in the district:—

TABLE 3—IRRIGATION SCHEMES IN PROGRESS

Scheme	Culturable commanded area (in acres)	Cost (Rs.)
1. L.I.S. at Longni Mathan ..	100	Rs. 1,34,209
2. L.I.S. at Puar ..	342	Rs. 3,97,000
3. L.I.S. at Bhabaur Sahi ..	1500	Rs. 30,62,250

20. *Main Crops.*—The following are the main crops grown in the district and command sizeable area under them. During 1971-72, the position was as below:—

TABLE 4—MAIN CROPS GROWN

Crop						Percentage of area commanded
1.	Maize	..	..	..	..	32.6
2.	Rice	..	..	..	..	7.2
3.	Wheat	..	..	..	..	42.4

21. Although maize crop occupies lesser area than wheat in the district, yet it is most important crop providing subsistence to the people for greater part of the year. Wheat crop has not been able to make a dent in the economy of the people, because its yield is low due to lack of irrigation and so is the case with rice. The other crops grown in the district are barley, gram, pulses, etc.

ANIMAL HUSBANDRY

22. The total livestock population of the district is 1,98,173 according to livestock census of 1972. The number of cattle per thousand human beings in the district works out to 738. The number of cattle per hundred hectares is 17,321. A striking feature of the district is the large number of working animals per hundred hectares of cultivable land (102). Thus in 1972 there were 130 working animals per hundred hectares of net area sown. This is because the holdings are very small and each cultivator likes to keep a pair of bullocks for his farm however small it is. This results in heavy under-utilization of bullock power. The quality of the animal is very poor; the bullocks are much smaller in size and their power of draught is low. There is an inverse correlation between number of draught animals and their quality.

Milch cattle.—What is true of draught animals is also true of the milch animals in the hilly areas. They are poor in quality and large in number and their milk yield is quite low. The number of milch cattle per 1,000 persons is, however, 484. The Government have opened the following veterinary institutions in the district for the improvement of cattle:—

1.	Veterinary Hospitals	..	4
2.	Veterinary Dispensaries	..	9
3.	Cross-breeding Centres	..	3 (included in the above).

Sheep and goats.—The number of sheep and goats in the district is 70,624. The Government has also opened a sheep breeding farm in Tal village having 300 sheep of improved quality. Its capacity will be increased to 1,600 sheep in the near future and thus it will be the biggest farm in Himachal Pradesh.

MEDICAL AND PUBLIC HEALTH

23. The medical facilities in the district are much below the State average as would be evident from the following table:—

TABLE 5—MEDICAL FACILITIES

Item 1	Number		No. per 1000 sq. kms.		No. per lakh of population	
	H. P. 2	Hamirpur 3	H. P. 4	Hamirpur 5	H. P. 6	Hamirpur 7
Hospitals and dispensaries..	620	30	11	3	18	11
Beds available ..	4,590	102	82	9	13	4

DRINKING WATER SUPPLY SCHEMES

24. So far, four schemes for providing drinking water supply to 19 villages have been completed. Fourteen schemes covering 249 villages are presently under execution. More efforts are needed to provide drinking water to the remaining villages at the earliest.

INDUSTRIES

25. Industrialization on extensive scale is often an important part of any programme aiming at rapid economic growth of a backward area. There are, however, several limiting factors which tend to hamper or at least slacken industrial growth in such an area. These limitations vary in extent and should be appreciated. Due to the low levels of economic growth, the demand within the region for the various industrial products is very small. The facilities like transportation, power, technical know-how etc., which favour industrial locations are inadequately developed in hilly areas. In the absence of adequate need for these facilities from other sectors of the economy they will have to be developed mainly as a part of the programme of industrial development. This tends to increase the investment costs and, therefore, the cost of production. The district has 524 small scale industrial units (household industries) registered with the Industries Department. They provide employment to an average 2-3 persons each and are mainly of wood work, bamboo work, tanning of leather, blacksmithy, etc. Their produce is consumed locally. As for the raw material, the same in respect of the controlled commodities is arranged by the Himachal Pradesh Mineral and Industrial Development Corporation, Simla. Some incentives need to be provided to the household industries so that they may create a marketable surplus thus giving boost to the rural economy.

TRADE AND COMMERCE

26. There are 226 co-operative societies having membership of 58,976 persons in the district, with share capital of Rs. 43,91,213 and working capital of Rs. 1,90,68,603. The loans outstanding so far are to the tune of Rs. 1,46,90,552. But the co-operative societies have not been able to oust completely private money lenders because money can also be had from them even for unproductive purposes and in privacy. The following banks also operate in the district:—

1. The State Bank of Patiala, Hamirpur.
2. The Punjab National Bank, Hamirpur/Tira-Sujanpur.
3. Central Bank of India, Nadaun.
4. Kangra Central Co-operative Bank, Hamirpur/Badsar/Bhota.

27. The district imports a large quantity of foodgrains, sugar, cloth, kerosene oil, medicines, etc. The main exports consist of timber, bamboo and resin. There are no regulated markets in the district. The principal centre of trade is Hamirpur. The trade is almost in the hands of private traders.

COMMUNICATIONS

28. *Roads.*—The following table gives a comparative study of roads in the district as also in the State:—

TABLE 6—ROAD LENGTH

(In Kilometres)

	Road length		Per 1000 sq. km.		Per lakh of population	
	H. P.	Hamirpur	H. P.	Hamirpur	H. P.	Hamirpur
1. Motorable double lane	.. 1,526	223.9	27.4	195.7	44.1	83.4
2. Motorable single lane	.. 5,844	171.6	105.0	150.0	168.9	63.9
3. Jeepable	.. 608	59.0	10.9	51.6	17.6	22.0
TOTAL	.. 7,978	454.5	143.3	397.3	230.6	169.3

29. It is evident from the above table that concentration of roads in the district per thousand square kilometres of area is much higher than that of the State, the figure for the district is 397.3 whereas for the State it is 143.3. It will be worthwhile to mention that the road length available per lakh of population is considerably low for the district under study as compared to the State as a whole. The most important deficiency of the road transport system arises from the inadequacy of the roads while we consider the pressure of the density of population on the available road length. A lot has to be achieved in order to bring the district at par with the State as far as the density of roads available per lakh of population is concerned.

30. *Transport.*—Till recently the means of transport and communications were meagre and people had to rely on bridle paths and pack animals. Motor vehicle traffic is now becoming popular along with better types of roads. The total number of motor vehicles registered in the district so far is 143. The operation is more concentrated upon private operators although the Himachal Government Transport buses also cater to the needs of the people to some extent.

31. *Post Offices.*—In the district the number of post offices upto the end of November, 1972 stood at 292. The inhabited census villages in the district are 1,633 which means that there are 1,341 villages without a post office and on an average one post office serves about 3.9 square kilometres of the area. The mail is now being carried by buses, but the runners still convey it from the motor heads to the interior parts.

EDUCATION

32. The table given below will reveal the position of educational facilities in the district:—

TABLE 7—EDUCATIONAL INSTITUTIONS

Institutions	Number		No. per 1000 sq.kms.		No. per lakh of population	
	H. P.	Hamirpur	H. P.	Hamirpur	H. P.	Hamirpur
1. Primary Schools	3,730	158	67	138	108	59
2. Middle Schools	836	43	15	38	24	16
3. High/Higher Secondary schools ..	426	35	8	31	12	13
4. Colleges (including Polytechnics) ..	19	2	..	2*	..	1*

..—Less than one.

*—Approximate figures.

It will be seen from the above table that the educational institutions are adequate when we consider their number per 1,000 square kilometres. As we pass on to their number with reference to per lakh of population, the position becomes still more clear. The colleges and the high/higher secondary schools are slightly above the state average. However, the primary and middle schools are far below the State figure and much needs to be done to provide more facilities of primary and basic education to the people so as to bring them at par with the State. Another feature of the district is that the male scholars outnumber the female scholars. They are 41,392 and 26,226, respectively. Apart from this, the Degree College has 1,130 scholars (boys 1,085 and girls 45). Some ways and means need also be devised so that more female students are induced to join the schools/colleges.

RURAL ELECTRIFICATION

33. So far 222 villages of Hamirpur district have been electrified. During 1972-73, twenty-four more villages are being electrified. This is inadequate and the State Electricity Board has to put in strenuous efforts to cover the remaining 1,387 villages as early as possible.

INCOME LEVELS

34. The National Council of Applied Economic Research has brought out an interesting study, namely, 'Survey of Hilly and Backward Areas of Punjab-March, 1966'. It has been observed therein that though the detailed data regarding the income levels for the latest year are not available, the estimates of per capita income made by NCAER for 1955-56 show that all the hilly districts are below the State (Punjab) average. Structurally the economy of the district or for that matter the hilly areas is heavily dependent on agriculture, where productivity is rather low under the present conditions of small holdings, lack of proper irrigation facilities, poor cultural practices and highly inadequate transport and marketing facilities. The contribution to the manufacturing activity is insignificant and this activity is confined to the unorganised sector of cottage and village industries where the output per worker is normally low. There are practically no large scale industries in the district.

35. Apart from the per capita income as an indicator of the level of living, other available evidence shows that the condition of people in the district is rather bad. Because of the lack of opportunities available locally, a large number of people annually go out of the district to seek employment elsewhere. These people are usually employed as coolies and domestic servants in the urban areas. The recruitment to army in the district is also quite large. The outflow of the people from the region results in a sizeable inflow of the income annually, though no estimate of it is possible. To the extent it takes place, it adds to the income of the people and thereby the rigours of poverty are reduced.

36. Information on plan expenditure and details about various measures introduced under planning for the different districts are not available. However, during the first and second plan periods there was a little emphasis on the development of various regions. Within the State plan outlays, in the first two plans, a greater attention seems to have been paid to those areas which were more accessible and which have easily exploitable potential. Because of their isolation, these areas did not attract the attention of the planners and consequently the outlays provided for these regions were meagre. The only scheme worth mention introduced in the area during the earlier plan periods was the Community Development and National Extension Service but because of their thin coverage, inadequate personnel and lack of imaginative approach, little was achieved in the field of economic development. A host of schemes such as popularisation of better seeds, fertilizers, etc., were introduced under the agricultural development programme but due to the inadequate coverage of these schemes and the lack of co-ordination between different agencies, no worthwhile results were achieved. For instance, better seeds and commercial fertilizers

were popularised without seeing whether necessary irrigation facilities were available. In some areas of the district, *kuhls*, were constructed for irrigation purposes at enormous costs, but their location was so poor that little irrigation has been done by them and their maintenance cost is now so high that the *kuhls* are practically abandoned by the State Government. These examples merely show, that there has been lack of proper planning at the field levels and the introduction of unco-ordinated schemes. The production level at various sectors has broadly remained static in these regions and the economy by and large has not benefited much even after a full decade of planning. The only notable achievements have been in the development of general education and public health and the construction of a few roads. Also one important drawback of many of the schemes was that these were drawn in terms of physical targets without consideration to their implications in terms of physical output which these schemes were likely to achieve. The result was that a number of schemes had involved a considerable outlay and yet their impact on the economy was bound to be insignificant. However, these pitfalls are now sought to be removed by the Government.



SOCIAL AND ECONOMIC PROBLEMS OF HIMACHAL PRADESH

—Hardyal,
*Minister of State for Panchayats,
Himachal Pradesh.*

The oldest authentic historical reference to the hill states is to be found in the records of Hiuen Tsiang who visited India in A.D. 629 and remained till A.D. 644. The States referred to by him are Urasha or Hazara; Trigarta or Jalandhare (Kangra) and Kuluta or Kulu. Kalhana's 'Rajtarangini' is replete with information about the eleventh and twelfth centuries—the epoch to which most of the famous Chamba inscriptions belong. The fascinating history of the hill States which speaks volumes about the art, culture and ruling dynasties has its own special significance. However, the people of these hill States had always remained poor, ignorant and isolated generally due to the natural conditions and particularly because of the ruthless exploitation by the then rulers. It is only during the post-independence period that political and economic influences have been at work which aim to revolutionise the social life of the hills.

2. Himachal Pradesh came into being as a centrally administered territory in April, 1948 by the integration of 30 erstwhile Punjab Hill States. Bilaspur, another princely hill State was merged with the Pradesh in April, 1954. Thus, it inherited heirarchical set-up deeply rooted in a caste dominated system based on economic, social and political exploitation. On 1st November, 1966, however, as a result of the re-organisation of the erstwhile Punjab State, hilly areas of Kangra, Kulu and Lahaul and Spiti districts were merged with this Pradesh. With the coming in of new areas and the Government policies of national integration and removal of untouchability, the age-old caste system is partially crumbling. Anthropologically, there are no tribes in Himachal Pradesh, whatever tribes have been declared under Article 320 of the Constitution are tribes by circumstances for having fled from the plains due to persecution by the Muslim rulers and settling in the interiors of the Pradesh. They have remained cut off from the outside world for a considerable period and thus remained economically and socially backward. Thus Himachalis purely come of the old Aryan stock inter-mixed here and there with races across the border. The polyandrous form of marriage which prevailed in

Kinnaur district, parts of Mahasu district, as well as in parts of Sirmur and Chamba districts is gradually disappearing.

3. Administratively, Himachal Pradesh is divided into 12 districts viz., Kangra, Una, Hamirpur, Mandi, Kulu, Lahaul and Spiti, Bilaspur, Solan, Simla, Sirmur, Chamba and Kinnaur with an area of 55,673 square kilometres and a population of 34.60 lakhs according to 1971 Census. Himachal Pradesh is one of the highly ruralised parts of India. According to 1971 Census, 93.01 per cent of the population lives in rural areas.

4. In view of a very high percentage of rural population, occupational distribution of the people in Himachal Pradesh is markedly different from that of the all-India average as given in the following table:—

TABLE 1—OCCUPATIONAL CLASSIFICATION

Classification of occupation	Percentage in	
	Himachal Pradesh	All-India
(i) Cultivators	71.60	42.87
(ii) Agricultural labourers	4.25	25.76
(iii) Other workers	24.15	31.37

AGRICULTURE

5. Agriculture is the mainstay of the people of Himachal Pradesh. According to 1971 Census, about 76 per cent of the working population depends on agriculture for their livelihood. The farming conditions in the Pradesh are altogether different from those in the plains. The farmer has to fight against very heavy odds. He has to put in persistent efforts to survive the vagaries of nature and to tap all the available sources to make a living out of his often shallow and stoney holding.

6. Of the total geographical area of 2,914.0 thousand hectares according to village papers for 1968-69, 549.0 thousand hectares or 18.9 per cent were net area sown. Uncultivated land, excluding current fallows, was 1353.4 thousand hectares or 46.4 per cent of the total geographical area. Area under forests was 636.1 hectares which is 21.8 per cent of the total geographical area. Land not available for cultivation and fallow lands were of the size of 375.5 and 12.9 thousand hectares, respectively.

7. A study of land utilization data reveals that net area sown which was 28.6 per cent of the total geographical area in 1950-51 increased to 29.5 per cent in 1955-56. However, with the merger of hilly areas of the erstwhile Punjab State, the percentage of the net area sown

recorded a steep decline as only 0.2 and 6.2 per cent of the total geographical area was net area sown in Lahaul and Spiti and Kulu districts, respectively. This increase has been mainly the result of decrease in uncultivated and fallow lands which declined from 44.8 per cent and 3.6 per cent in 1950-51 to 44.3 per cent and 1.9 per cent in 1955-56, respectively. Since the merger of new areas of Punjab, net area sown in 1967-68 which was 18.8 per cent of the total geographical area has again slightly risen to 18.9 per cent in 1968-69. The area under forests, however, remained steady during these years.

8. The principal cereals grown in Himachal Pradesh are rice, maize, ragi and other small millets during *kharif* season and wheat and barley during *rabi* season. Among other principal crops gram and other pulses, potatoes, rape and mustard and ginger are important. Of the total cropped area of 902.2 thousand hectares during 1968-69, 838.3 thousand hectares (92.9 per cent) were under food crops and the rest under non-food crops. Among food crops, rice occupied 96.0 thousand hectares (11.4 per cent), maize 252.1 thousand hectares (30.1 per cent), ragi 13.8 thousand hectares (1.6 per cent), small millets 27.9 thousand hectares (3.3 per cent), wheat 324.0 thousand hectares (38.6 per cent), barley 45.8 thousand hectares (5.4 per cent), gram 11.4 thousand hectares (1.3 per cent), other pulses 44.7 thousand hectares (5.3 per cent), potatoes 15.9 thousand hectares (1.9 per cent) and sugarcane 4.6 thousand hectares (0.5 per cent). Out of a total of 16.5 thousand hectares under oil seeds, rape and mustard occupied 3.8 thousand hectares. Among other non-food crops, tobacco and cotton occupied an area of 0.8 and 0.8 thousand hectares each, respectively.

9. With regard to food production, Himachal Pradesh at the time of its formation was not self-sufficient. Adequate attention was, therefore, paid to the improvement of agriculture under the Five Year Plans. Main emphasis was laid on intensive rather than extensive cultivation in view of limited scope for bringing additional area under cultivation because of dense forests and mountainous tracts. Schemes like distribution of chemical fertilizers, improved seeds, propagation of the use of modern and up-to-date methods of cultivation, etc. for which people had a strong aversion prior to the plans, were vigorously pursued.

10. *Kuhls* are the main source of irrigation in Himachal Pradesh, although in certain low lying areas, wells also constitute a major source of irrigation. Only 16 per cent of the net area sown during 1968-69 was irrigated. Major part of the cultivated area is dependent on rains and relatively more subject to the vagaries of nature than in the plains. The average annual rainfall in the Pradesh is 125 cm., varying from 45 cm. in Lahaul and Spiti to 283 cm. in Kangra district. To increase the irrigated area, in recent years a number of minor irrigation schemes embracing programmes of setting up of lift-pumps, digging wells, construction of tanks, etc. have been drawn up.

11. Himachal Pradesh has established itself as an important centre of production of high quality seed potatoes which are in great demand all over the country. In respect of

vegetables, steps for the multiplication of improved seeds of different vegetables and for the production of vegetable seeds are already under way. Himachal Pradesh has, therefore, a thriving export trade in several vegetables including peas, beans, tomatoes, etc.

HORTICULTURE

12. Large variations in climate and soil types present suitable agro-climatic conditions for the growing of fruits varying from tropical to temperate fruits and consequently unlimited possibilities of horticulture development in the Pradesh. In view of the measures taken by the Government under the plans and financial yields of the orchards, people have taken to horticulture in a big way. For further development of horticulture and providing suitable marketing facilities to the orchardists, the Government of Himachal Pradesh has proposed to set up a chain of cold storages and canning units.

INDUSTRIES AND MINES

13. Economically, Himachal Pradesh is a backward and undeveloped region. The standard of living is extremely low and the modes of pursuits of life in the interior are very primitive. The results of scientific research and technical education have not yet travelled far enough into the interior. Undiversified and predominantly agricultural economy needs to be stepped up and placed on a balanced plane by providing sources of additional income through industrial enterprise and exploitation of vast mineral resources in the Pradesh which have remained unexplored and unexploited for long. There are, at present, only three big and relatively well-established industrial concerns. The first being Nahan Foundry at Nahan which is well-known for the manufacture of agricultural implements like chaff-cutters, cane crushers, ploughs and centrifugal pumps, etc. Rosin and Turpentine Factory is another industrial concern at Nahan, manufacturing rosin, turpentine oil, paints and varnishes. The prospects for the development of this industry in the Pradesh are bright as resin, the basic raw material, is available in abundance in the forest areas. The third concern namely Mohan Meakin Breweries located at Solan Brewery, produces beer of fine quality which is in demand all over the country.

14. Among other registered industrial production units are Sugar Factory at Paonta, Gun Factory at Mandi and Tea Estate at Chauntra. Besides, there are two salt mines, one located at Drang and the other at Guma, both registered under Indian Mines Act.

15. No geological survey of the mineral potentials of Himachal Pradesh has so far been undertaken but rich deposits of lime in Paonta, Bilaspur, Kangra and Chamba areas have been located and cement industry is being set-up in these areas.

16. In view of unfavourable circumstances for the development of large industries in the Pradesh, such as the difficulties of transport and poor local demand, no new industrial establishment has sprung up so far. With a view to utilizing properly the available raw materials, steps to develop small scale industries in the Pradesh are already under way.

POWER

17. All the five major river systems, namely the Chenab, the Ravi, the Beas, the Sutlej and the Yamuna, which emanate from the Western Himalayas, pass through the Pradesh. These snowfed rivers and their tributaries have copious discharge all the year round and flow with steep bed slopes in their mountainous reaches with series of loops and bends which can be economically utilised for hydel generaion. From preliminary hydrological, topographical and geological investigations it has been estimated that the above five major river systems can be economically harnessed to generate over 8 million kw of power. An effort has been made to make master plans of hydro-power development of individual river basins on the basis of available topographical, hydrological and geological data and site inspections of potential projects. On the basis of such data, the under-mentioned major, medium and small projects have been indentified. Some of the hydel projects have already been constructed in the Sutlej, the Beas and the Yamuna basins by the Government of Punjab, the Bhakra Management and Beas Construction Board of Government of India and the Uttar Pradesh Government.

18. Basin-wise break-up of hydel potetnial is given below:—

<i>Name of the basin</i>	<i>Power potential</i>
Yamuna Basin	200 MW
Sutlej Basin	4,000 MW
Beas Basin	2,200 MW
Ravi Basin	1,050 MW
Chenab Basin	1,050 MW
TOTAL	8,500 MW

19. The following projects have been identified in Yamuna basin:—

- | | |
|---|---------------|
| (1) Giri Multipurpose Project Stage-I | 60 MW (I.C.) |
| (2) Giri Multipurpose Project Stage-II (Renuka Dam Project) | 100 MW (I.C.) |
| (3) Andhra Hydel Scheme | 6 MW (I.C.) |

20. At present, only Giri-Bata Project with an estimated cost of Rs. 15 crores and envisaging annual generation of 290 million units at a cost of 4.50 paise per unit, is under execution. The lack of financial resources of the State Government is the only impediment in the development of this vast natural potential available in the State.

SOCIO-ECONOMIC PROBLEMS OF UNA DISTRICT



—Sarla Sharma,
*Minister of State for Family Planning,
Health and Co-operation,
Himachal Pradesh.*

The complex problem of eliminating the economic backwardness and hastening social progress of the newly created Una district requires an analysis of the prevailing conditions. September 1, 1972 saw the fulfilment of a long cherished desire of the people of Una, Kangra and Hamirpur areas when the erstwhile Kangra district was trifurcated to form these new districts. While in Punjab, Una was one of the biggest tehsils as regards area and population. It remained backward not so much due to the lack of resources but to the neglect by Government.

HISTORICAL AND SOCIAL BACKGROUND

2. Una owes its importance for being the residence of a branch of Bedi family. Founded by Baba Kalidhari, Una was further enlarged by Baba Sahib Singh. Kalidhari, (the great grand father of Bedi Sujan Singh) having disciples in Una, migrated from Dera Baba Nanak and received a grant of 72 *ghumaons* from Jaswal Raja Ram Singh. His grandson, Baba Sahib Singh who was a man of great influence among Sikhs, exploited religious wars against Afghans of Malerkotla in 1794 and Rajputs of Raikot in 1798. In 1860, Raja Umed Singh gave Baba Sahib Singh the whole of the Una Taluka, a grant confirmed by Maharaja Ranjit Singh in 1872. About the same time, he received Nurpur from Sardar Budh Singh. He founded a 'Gaddi' in Una inherited by the celebrated Bedi Family.

AREA AND POPULATION

3. Area of the new district is about 1,549 square kilometres. The new district is composed of two tehsils namely Una and Amb. There are four blocks namely Amb, Gagret, Una and Dhundla. The district is divided into 86 patwar circles, 303 revenue villages and 604 census villages. Forests occupy 21 per cent of the total area. The district has small

mountainous area in the far north, plateau in the west and flat alluvial plain in the rest of the part. Thus, this area enjoys the benefits of both hills and plains having a big valley as well as two big hill ranges.

4. Due to the sub-mountainous physiography of the district, the climate is generally healthy. It does not suffer from excessive heat during summer while winter is comparatively dry. The total annual rainfall was about 1,287.50 mm. during 1971-72.

5. The total population according to 1971 census is 210 thousand. The district ranks eighth in Himachal Pradesh in regard to population. The urban population is only 10,338 *i.e.* about 5.0 per cent of the total. The density of population in the district is 140 persons per square kilometre as against 62 for the Pradesh.

AGRICULTURE

6. Agriculture is the main source of livelihood for a very large majority of the people. Owing to varied elevations, soil and climatic conditions, almost all the crops can be grown in this area. If the lands in the Swan valley are properly developed and its water resources exploited, this area could become the granary of Himachal Pradesh.

7. *Land Utilisation.*—The land use details of the district for the year 1971-72, according to the revenue records are as follows:—

TABLE 1—LAND USE STATISTICS

Land details							Area* (in hectares)
Total geographical area	..	..	..	..	..	..	1,54,918
Forests	..	..	..	..	..	..	31,710
Barren and unculturable waste	..	..	..	..	..	..	4,357
Land put to non-agricultural uses	..	..	..	..	..	..	32,753
Culturable waste	..	..	..	..	..	..	40,475
Permanent pastures and other grazing lands	..	..	..	..	..	..	944
Land under miscellaneous tree crops and groves	..	..	..	..	..	..	—
Current fallows	..	..	..	..	..	..	5,242
Other fallows	..	..	..	..	..	..	—
Net area sown	..	..	..	..	..	..	39,437
Area sown more than once	..	..	..	..	..	..	20,110
Total cropped area	..	..	..	..	..	..	59,547
Net irrigated area	..	..	..	..	..	..	2,299

*Provisional.

8. The net irrigated area is only 5.1 per cent of the net area sown. The area possesses sufficient water resources but so far they have not been exploited. If proper irrigational facilities are made available, this area can grow large quantities of fruits and vegetables due to ideal sub-tropical climatic conditions.

SOIL

9. The soils of the district are interspersed with one another mainly due to the action of *choes*. The following description holds good for soils of this area. The Shiwaliks, which form the watershed of the district, are for the most part soft sand stone, a soil which requires frequent but not too heavy showers (heavy rain leading to wash the nitrates). The soil of Una valley is for the most part a good alluvial loam, which is specially fertile on the banks. In the uplands fringing the eastern side of the Una valley the soil is for the most part a good loam, largely interspersed and in some cases covered with stones and pebbles which have been weathered out of the adjacent hill sides. The uplands on the west side of the valley are of more sandy texture. The lighter soils are on the whole more suitable to *rabi* than *kharif* cultivation. The sloping stony soil of the hills in Una district is not well adopted and quite suitable for *rabi* cultivation. Its situation promotes drainage and consequent more or less rapid drying. On such soils *rabi* is for the most part restricted to years of heavy rainfall.

FORESTS

10. The forests in this district are confined to the Shiwaliks in two long hill ranges, one on the east and the other on the west. The inner slopes of the Shiwaliks which drain into Jaswan Dun are sparsely clothed with pine of poor growth, bamboo and the poorly stocked scrub forests. Forests occupy 21 per cent of the total geographical area as against 38.5 per cent in the Pradesh. Most of the forests in the district are private owned. Apart from valuable trees, these hills grow grasses and important herbs. But no significant attempt has been made to exploit this forest wealth. Valuable trees and herbs like *harar*, *bahera*, *amla*, mulberry can easily be grown on commercial scale.

11. Afforestation on right lines would improve these hills. Maintenance of soil by correct management and keeping intact the integrity of forests by minimizing forest fires, indiscriminate grazing and injuries to forest growth through lopping, grass cutting and quarrying, is needed. Soil conservation problems especially in the catchment area of Swan will be a bit solved if better attention is given to them.

IRRIGATION

12. Irrigation is the base of agricultural development and should receive top priority. The area has immense irrigational potential, but so far the vast irrigation resources

have remained unexploited. The irrigated area is 2,299 hectares and is only 3 per cent of the total area cultivated. The salvation of the poor cultivators lies in extending irrigation facilities and particularly, installation of tube wells. If the lands in the Swan valley were properly developed and its water resources exploited this area could become the granary of Himachal Pradesh. This area also possesses ideal conditions for growing sub-tropical fruits and vegetables and if proper conditions for marketing and irrigation are available this district could turn into a rich vegetable growing area. The Government of Himachal Pradesh has already taken up many irrigation schemes in this area which are either completed or under construction. The schemes are as given below:—

TABLE 2—IRRIGATION SCHEMES COMPLETED

Scheme					Year of completion	Coverage (in acres)	Amount (Rs.)
Andora	..	..	..	..	1969-70	340	1,21,400
Karloshi	..	..	..	..	1969-70	810	1,73,430
Jankor	..	..	..	..	1969-70	128	1,41,300

TABLE 3—IRRIGATION SCHEMES IN PROGRESS

[illegible]

TABLE 3—IRRIGATION SCHEMES PROPOSED FOR THE YEAR 1973-74

[illegible]

ROADS

13. Road transport has a vital role to play in the socio-economic development of any hilly area and efficient road transport requires a good net work of roads connecting all parts of the countryside. Roads in this area have not been sufficiently developed as yet and as such producers are not yet receiving proper remuneration to their crops. The main hurdle in the development of roads has been the large number of *choes* in this area. The Swan stream, which rises in the northern part of the district, flows south-east until it falls into Sutlej near Anandpur Sahib. During the rainy season it collects water from many drains and swells to a breadth of some two miles. It abounds in quick sand, and is thus very risky to cross during spates.

14. It is, therefore, essential to bridge all the *choes* so that Una may be linked by roads to other parts of the State. Four to five bridges in this area have been completed including Raisiri, Tiori and Dasora. The Pradesh Government has already taken initiative in this regard and a number of bridges are either under construction or proposed to be constructed in the near future. These bridges are:—

Una-Mubarkpur Road (Under construction)

- (i) Biral Bridge.
- (ii) Garini Bridge.
- (iii) Jaswal Bridge.
- (iv) Kator Bridge.

While bridges from serial number (i) to (iii) are under construction the Kator bridge is yet to be taken up. Tiori Chuk and Dasura bridge on this road have already been completed in May, 1972.

Una-Aghar-Mandi Road

- (i) Ajoli bridge
- (ii) Dangli bridge
- (iii) Saur bridge

These are all-weather bridges and are expected to be completed shortly. Besides, Bambloo khud and Sukar khud bridges have already been completed in June, 1968 and March, 1965, respectively.

Ispur-Gagret Road

- (i) Khud bridge
- (ii) Nagroli bridge
- (iii) Pandoga bridge
- (iv) Mawa bridge.
- (v) Kothar Jaswalana bridge.

Construction of these bridges is yet to be started.

Hoshiarpur-Una Road

- (i) Ispur choe bridge
- (ii) Barsoli bridge
- (iii) Pandoga bridge.

The Pandoga bridge is nearly complete. The Swan bridge on Santokhgarh Pahlian connecting Jhanjoan has also been undertaken.

TRANSPORT

15. Passenger and goods transport is being run by Himachal Government Transport mostly in competition with other transport undertakings and the private operators. The fleet strength of the Una region of Himachal Government Transport is however, rather low in comparison to other regions but this strength is expected to increase as soon as the roads become motorable even if the operations are not remunerative. Further, Una being only eighteen kilometres from Nangal, it may be easily linked to Nangal with rail.

INDUSTRIES

16. In order to divert the pressure on agriculture towards industries, it is necessary to set up an industrial complex. A bold attempt to set up a rosin factory at Gagret in co-operative sector could not have good results. A card board factory in co-operative sector is running at Oel. The factory is small and faces several difficulties in processing machinery. The area is, therefore, quite backward in regard to industries. About eight hosiery units have also been set up at Una which are functioning now. An industrial area at Mehatpur is also being developed.

BANKING INSTITUTIONS

17. There are only three banking institutions in the area namely (i) Central Bank of India, Santokhgarh, (ii) Central Bank of India, Una and (iii) Punjab National Bank, Mehatpur besides, 5 banks of Kangra Central Co-operative Banks at Daulatpur Chowk, Chintpurni, Amb, Una and Santokhgarh.

EDUCATION

18. Education plays a catalytic role in socio-economic development of the people and, thus, it is an essential social overhead to be provided by the State. Before merger this area had mostly private educational institutions but after merger with Himachal Pradesh, Government institutions are increasing. Even a degree college has been opened. Along with it two privately managed colleges have also come up. The following table reveals the position of institutions in the district:—

TABLE 5—EDUCATIONAL INSTITUTIONS

Type	Number
Primary Schools	196
Middle Schools	42
High/Higher Secondary Schools	37
Colleges	3
Industrial Training Institution	1

MEDICAL AND PUBLIC HEALTH

19. There are 233 hospitals and dispensaries in the district and the number of beds available is 51.

WATER SUPPLY SCHEMES

20. The main sources of water supply in the district are the *nallhas*, local springs and the *kuhls*. The villagers have to fetch water from long distances. For solving these problems, water supply schemes have been taken up by the Pradesh Government as indicated below:—

- (i) Water supply schemes to the villages of Kangar, Badher and Horoli. The scheme covers 6 villages and a population of 11,300 persons.
- (ii) *Palakwa scheme*.—The scheme is to be commissioned shortly and pipe lines are being laid. The scheme covers one village of population 6,292.
- (iii) *Bhangar Bhatoli scheme*.—This scheme covers 8 villages and a population of 6,400 persons. Pipe lines have been laid and the tube well is being installed.
- (iv) *Khud scheme*.—This scheme covers only one village of 2,050 population. The scheme has already been completed.
- (v) *Nangal Kalan scheme*.—This scheme covering 6 villages and a population of 8,000 is under execution.
- (vi) *Bothu scheme*.—It covers one village of 2,000 population. The work is yet to be started.
- (vii) *Pallion scheme*.—This scheme also covers only one village of 6,777 population. The work is in progress.
- (viii) *Extension of water supply scheme to Beat Halka*.—This scheme covers 14 villages. The work is in progress. Along with these schemes there is one scheme under execution in Dhundla block for providing drinking water supply to 16 villages.

SOCIAL PROBLEMS

21. Una is predominantly an agricultural district. The rural community is not a fraction but almost the whole of it. The problems profoundly affecting the rural life are complex to a great deal where social and economic factors have combined into one. The caste system,

Primitive traditions and lack of scientific knowledge in the rural areas are the foremost problems. Eliminating economic backwardness of this area will pose a big problem unless its social problems are tackled properly.

ECONOMIC PROBLEMS

22. The rigours of terrain, vagaries of weather, bad means of communications due to a large number of *khuds* playing havoc during rains, pose considerable economic problems. The unemployment problem is also constantly growing. Some of these problems have been discussed in the following paragraphs:—

- (i) *Soil erosion*.—The *choes* are one of the major problems of the district. They create havoc and devastation during floods and large tracts of agricultural lands are washed away. Not much has been done to control these *choes* so far. The soil conservation measures which are now being taken are also not sufficient. According to the figures for 1969-70, the various Soil Conservation Divisions covering the entire affected area advanced only Rs. 13,414 as loans and Rs. 8,967 as subsidy for the soil conservation work. The physical achievements of the sub-divisions were as below:—

TABLE 6—PROGRESS OF SOIL CONSERVATION

Nature of work						Area covered (hectares)
1.	Levelling and grading	..	..	..	..	27
2.	Bench terracing	..	..	..	..	0.04
3.	Water disposal and binding	..	..	..	..	36
4.	Reclamation and drainage	..	..	..	..	6
5.	Treatment of critical area	..	..	..	..	44

- (ii) *Communications*.—Due to the existence of the large number of *choes* and the construction of comparatively lesser number of bridges over them, the communication facilities are still rather poor. Post and telegraph services are also insufficient at present. There are only thirty telephone lines in Una whereas it needs at least 100 lines.

- (iii) *Fragmentation of holdings*.—Small and uneconomic agricultural holdings are another economic problem to be tackled. The distribution of holdings according to farm size groups and the respective area commanded by them is given in the table below:—

TABLE 7—SIZE OF LAND HOLDINGS

Size of holdings		Number	Area commanded (hectares)
Less than one hectare ..	..	38,175 (71.2%)	11,728 (15.5%)
1 to 5 hectares ..	..	12,662 (23.6%)	26,235 (34.9%)
5 to 20 hectares ..	..	2,407 (4.5%)	21,088 (27.9%)
20 hectares and above ..	..	392 (0.7%)	16,294 (21.7%)
TOTAL ..		53,636 (100.0%)	75,345 (100.0%)

As is evident from the data presented in the above table, 94.8 per cent of the landholders have only 50.4 per cent of the agricultural area in holdings of size 5 hectares or less. As many as 71.2 per cent of the total holdings in the district are of less than one hectare.

- (iv) *Housing*.—The problem of housing is acute in the urban areas, particularly Una town. In the rural areas, housing is practically no problem. Recently, the Pradesh Government has decided to provide land to the landless and land for construction of houses for the houseless on priority basis.



THE PARENT AND THE FLEDGLING

—*Lekh Ram Thakur,*
Deputy Speaker,
Vidhan Sabha, Himachal Pradesh.

During the twenty-five years of its life—coinciding with the Silver Jubilee celebrations of the country's independence—Himachal Pradesh has taken big strides on the path of progress due, primarily to the zeal and dedicated work of its leaders, especially its Chief Minister, Dr. Y. S. Parmar. Its picture today is so vastly different from what it was quarter of a century ago that it appears as if it has undergone complete transformation. The net-work of roads connecting the various parts of the Pradesh have not only opened it for contact and communication with the rest of the country but also exposed even its hitherto inaccessible parts to the outside world. This is, in itself, a great blessing because in this advanced age of technology when the whole world has shrunk into a small unit, the people of the backward areas of the Pradesh are now able to reach across to those inhabiting other parts of the country as well as those in other parts of the globe. Through these arteries and veins all along the surface of Pradesh, has flowed the life—blood of new knowledge in the form of literacy. Education has now reached almost every tiny hamlet of the Pradesh and with it has come an upsurge of new ideas, new social and political consciousness. It marks the end of orthodoxy, conservatism, the loosening of the stranglehold of old and worn-out traditions and taboos. Economically an average Himachali to-day is much better off than he was, say, two decades ago. In fact, with the entire Pradesh being dotted with apple and stone-fruit orchards and potato fields, its economy is on very sound footing.

2. The merging of the new areas in 1966 and the attainment of full Statehood two years ago accelerated the rate of progress. The two blood-streams of the old and newly merged areas have given birth to new life full of vitality, greater vigour and more intense desire to reach new heights of achievement and glory in all spheres of activity. The newly merged parts of the Pradesh contributed their own share of distinctive identity in the form of art, culture, beauty of flora and fauna and beauty of terrain. In short, they brought a vibrant soul to match

the soul of the old region. And within a short span of two years the combined strength of the two has worked wonders.

3. *Right Move.*—The expansion in the territorial limits of the Pradesh inevitably necessitated the demarcation of its administrative units and the birth of new districts. This was a move in the right direction to meet the legitimate demands of the people, and in line with the general policy of decentralisation of power. It also meant tapping new resources, talent and skill in the hitherto politically-neglected and under-developed parts of the Pradesh. It has resulted in the discovery, in the words of a poet, of “many a gem of purest ray serene”, which otherwise would have “blushed unseen”. for want of proper opportunities to shine and show their worth.

4. The district of Solan has turned out to be a real mine of gold in this respect. With average height ranging from 2,000 feet to 5,000 feet above sea level, an area of 1,936 square kilometres and population of 2,37,402 people, the newly created district is closely knit for administrative purposes and enjoys distinct political entity. Administratively, none of its parts is inaccessible in any part of the year and politically it is homogenous. Its political leadership is not only mature but also progressive. Its physical contours combine vast valleys with tall mountains bare as well as wooded. Its inhabitants almost all speak the same language—Pahari with a strong Hindi bias. This is because of its close proximity to the plains. Ramshahr, for instance, is mere 11 miles from the plains, and yet has an altitude of 4,500 feet. Some of its towns as for example, Solan, Nalagarh, Kasauli, Chail, Dharampur are as old as the very hills of Simla. The Cantonments of Dagshai and Subathu are well-known relics of the British regime and still stage a number of sports tournaments every year. They enjoy a dual blessing of combining the quiet, peaceableness scenic charm and coolness of a hill station with the flat level, panoramic vast stretches of land of the plains. Their climate is moderate and salubrious. Due to their proximity to the plains of Punjab and Haryana they serve as excellent holiday resorts for the tourists. Chail has huge fine palaces which till yesterday were the property of the Maharaja of Patiala but are now owned by the State Government and have been converted into a tourist bungalow. None of these places is more than three to four hours drive from the scorching heat of the plains in summer. Chail leads in having the highest cricket ground in the world.

5. These places also have rich historical association. Plassi and Chamba in Nalagarh tehsil are well-known for British-Gurkha War as far back as the seventeenth century. Malaun still exhibits guns of that conflict and Ramgarh has the grave of a British General killed in the fighting.

6. *Cultural Background.*—The district is in the forefront of the educational scene of the Pradesh and its rate of literacy is fairly high. The public school at Sanawar is on the educational map of the world. Culturally it is as rich as the rest of the Pradesh. Himachal has a distinct cultural tradition and its folk arts—especially the arts of dance, drama, music

and painting compare most favourably with, and even excel, such arts of any other region of the country. In the absence of any means of communication in the interior of the Pradesh they have so far remained unknown and a limbo of the past. However, in a way, their seclusion has been a blessing in disguise in that they have not been exposed to the sophisticated influences of urban areas and thus retained intact their original, primitive, folk character. But, from another point of view they have been gradually dying out in the absence of proper publicity and recognition. Moreover with the disappearance of the feudal lords, the real patrons of arts from the scene, the Government and the State have stepped into the breach and filled the vacuum. Consequently, the towns and cities have acted as lode-stones for the arts and also, ironically, their worst tyrants.

7. Kangra paintings are known all over the world for their historical relevance and artistic excellence. The Kulu, Chamba and Kinnaur folk dancers are famous for their gay abandon and the folk drama. *Kariyala* contains the germs of some of the latest theatrical techniques of western dramaturgy. The large variety of music and musical instruments is almost amazing.

8. The district of Solan is famous for *Gangi*, musical duet, and *Gidda*, folk dance which is very much akin to the *Gidda*, of Punjab plains. At the same time the range of its musical tunes is so vast as to eschew the best traditions of the plains and the hills. Herein lies its peculiar feature and unique charm.

9. The art and culture of the district—as of the rest of the Pradesh—is an index of the artistic sensibilities of its people and is closely linked with the socio-economic scene. The various fairs, festivals and cultural shows held in the district are either associated with the change and advent of seasons for the social customs and practices. All the folk arts, in fact, are a reflection of the social modes and patterns of living. The simple austere scale on which such shows are arranged betrays the economic standard of living of the hill folk. The importation into them of complications and sophistications of modern life tend to make them much more expensive and artificial. It is in this way that they are being appropriated more and more by the cities.

10. *Health Resorts*.—The salubrious climate and the abundance of *chil* tree forests in the district make it a fine health resort as a whole. This explains the existence of at least three first-rate sanatoria—Edward Sanitarium, Jubbar Sanitarium and Mandodhar T.B. Clinic near Dharampur which, in itself, is a fine health resort.

11. *Agricultural and Horticultural Wealth*.—In agricultural and horticultural wealth, the district compares very favourably with and even excels any other district of the Pradesh. With its abundance of valleys (Saproon valley in Solan is the biggest among them for vegetable seed), black fertile soil, moderate climate and water in the shape of large number of mountain springs, the district produces large quantities of vegetables—in Kandaghat and Solan, and wheat

and maize in Nalagarh. Besides, the district is the largest producer of ginger and tomatoes which are exported to all parts of the country. With proper irrigation facilities in the valley of Nalagarh, it can become another granary of the Pradesh. The district enjoys pride of place in the entire country in the growth of mushroom at Solan which means great agricultural wealth. Another of its pride products is cauliflower. The district, similarly, leads in producing citrus fruits, apricots, plums, peaches and walnuts for which climatically it is best suited.

12. *Industrial Potential.*—Its industrial potential is also immense. Solan, Nalagarh and Barotiwala are industrial estates and Badhalag, Plahwala and Khadli have rich limestone deposits. The Krishangarh area has a very large mass of stone and gypsum clay which is used for making beautiful toys. Parwanu has a cold storage, probably the only one of its kind in the entire Pradesh.

13. *Developmental Schemes.*—The district is round the corner for a larger number of developmental schemes of various types. The establishment of a fruit canning unit will go a long way towards making the maximum possible use of its stone fruit from the financial and revenue point of view. Similarly the provision of adequate processing and marketing facilities for fruit—which at present is done outside the Pradesh—will eliminate all the wastage caused in transit. The Himachal Pradesh Mineral and Small Scale Industries Corporation is establishing a fertiliser granulation plant factory at Nalagarh at an initial capital cost of Rs. one crore. More than two crores of rupees are also to be spent upto the end of 1974 by the Government of the Pradesh under the Marginal Farmers and Agricultural Labour Agency in Kunihar and Jagjitnagar Blocks, while in Kandaghat, Dharampur and Nalagarh Blocks schemes under it have already been introduced. Similarly the Union Government will spend a sum of Rs. 12.50 lakhs annually on crash programmes such as building of roads, link roads, etc. Another most creditable scheme is the setting up of milk chilling plants at Nalagarh and Kandaghat.

14. *Bright future.*—The young district of Solan, like the rest of the Pradesh, has a bright future and is ready to play its part in the fulfilment of the dream of a socialistic pattern of life for India under the inspiring leadership of our Prime Minister, Mrs. Indira Gandhi. In years to come the district will become the chief grape producing area in the country. Already experiments are under way in Solan Brewery for making Vodka from apples and potatoes produced in such large quantities in the upper parts of Simla district. The day is not far when Himachal will be in a position to supply grape wine equal in quality with the best in the world. The mineral deposits in the district also remain to be tapped. All this means wealth and economic prosperity for the Pradesh and betterment of the lot of its people.



PLANNED DEVELOPMENT IN HIMACHAL PRADESH

—K. N. Channa,
(Former) Chief Secretary,
Himachal Pradesh.

Planned development as understood today was unknown in the 30 erstwhile hilly states which were integrated to form Himachal Pradesh in 1948. The limited resources of the then rulers, lack of communications and the generally poor standards of health, education and economy of the people were the main reasons for keeping the hills neglected in matters of development.

2. On the eve of the formation of the Pradesh the integrating states, in different stages of economic and social development, were on the whole rather backward and the Government had to start virtually from a scratch.

3. Planned development was introduced in 1952, within a few months of the swearing in of the first people's Government in the then Part C State of Himachal Pradesh. Today we can look with satisfaction on the achievements made towards ameliorating the lot of the people.

4. Road construction has all along been given a very high priority in the Pradesh. Plans as roads are aptly considered the pre-requisite for all the development activities. These are essential for opening the area for productive occupation, utilisation of forests and development of horticulture and industry in different parts of the Pradesh.

5. The lot of the average man is basically linked with agriculture which is the mainstay of 76 per cent of the population of the Pradesh. The emphasis in the matter of planned development, therefore, has necessarily to be given more on the extension and intensification of agriculture.

PLAN INVESTMENT

6. The First Plan of the Pradesh was a moderate one but the subsequent Plans witnessed a rising investment in the public sector. The following table gives the size of the various Plans and per capita investment in the public sector in Himachal Pradesh.

TABLE 1—SIZE OF PLANS AND INVESTMENT IN PUBLIC SECTOR

Plan period	Investment (Rs. crores)	Estimated mid period popula- tion (In lakhs)	Per capita Plan Investment (Rs.)	
			Plan period 5 years	Per annum
1st Plan (1951-52 to 1955-56) ..	5.27	11.68	45.12	9.02
2nd Plan (1956-57 to 1960-61) ..	16.03	12.90	124.26	24.85
3rd Plan (1961-62 to 1965-66) ..	33.84	34.33	236.15	47.23
Annual Plans (1966-67 to 1968-69) ..	39.75	32.18	123.52	41.17
4th Plan (1969-70 to 1973-74) ..	114.39	34.96	327.20	65.44
5th Plan ..	260.00	38.79	670.27	134.05

The sectoral break-up of expenditure/outlays for various plans is given in the following table:—

TABLE 2—SECTORAL BREAK-UP OF PLAN OUTLAYS/EXPENDITURE

(Rs. in lakhs)

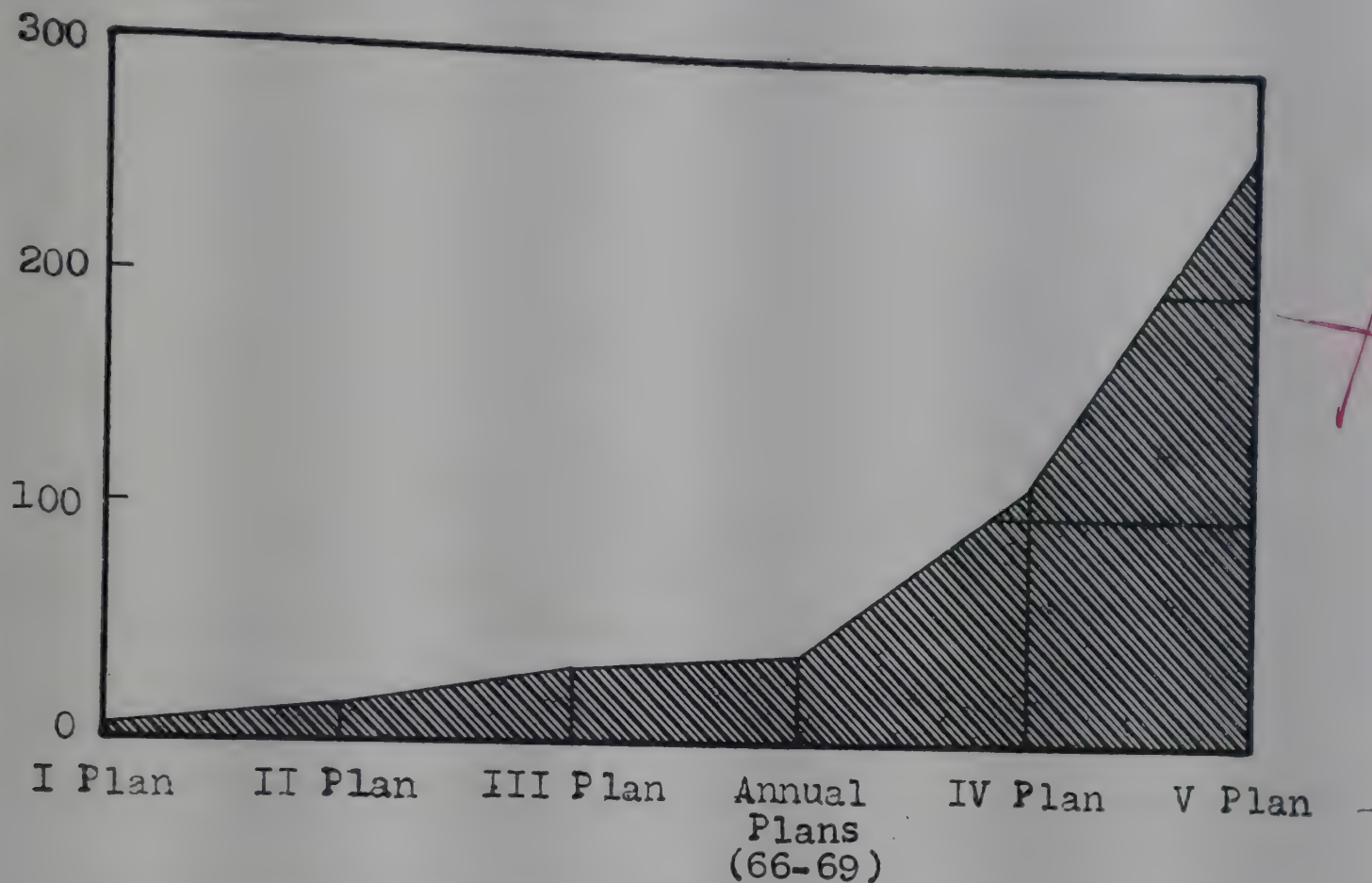
Sector		I Plan	II Plan	III Plan	Annual Plans (1966-69)	IV Plan	V Plan
1. Agricultural Programmes	..	73.81	251.27	769.15	736.41	2,813.82	5,000.00
2. Co-operation and C.D.	..	74.13	238.27	350.45	179.60	386.09	600.00
3. Irrigation and Power	..	21.59	150.69	240.14	1,111.64	2,369.32	5,500.00
4. Transport and Communications		243.54	595.22	1,191.10	1,351.03	3,251.14	6,200.00
5. Industry and Mining	..	8.88	39.50	84.16	126.43	508.77	2,000.00
6. Social Services	..	104.98	308.36	716.27	459.67	2,056.56	6,400.00
7. Miscellaneous	..	0.32	19.29	33.20	10.43	52.99	300.00
TOTAL	..	527.25	1,602.60	3,384.47	3,975.21	11,438.69	26,000.00

AGRICULTURE

7. According to the land utilisation statistics for 1969-70, the Pradesh has an area of 29,44,037 hectares out of which 18.7 per cent formed the net area sown. The area sown more than once is 3,60,879 hectares, that is 65.7 per cent of the net area sown.

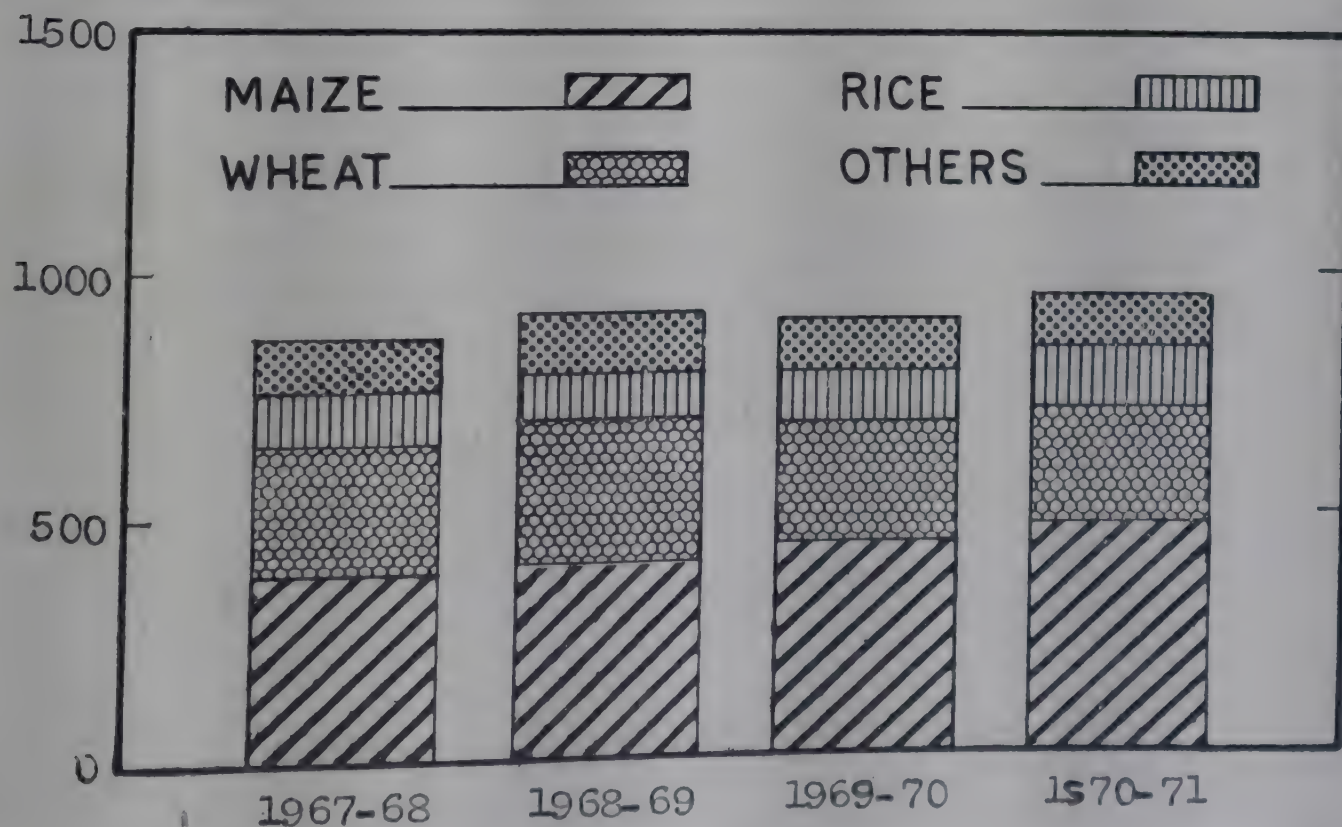
PLAN OUTLAYS

Rs.in crores



FOODGRAINS PRODUCTION

'000 tonnes



FRUITS

'000 hect.

60

AREA

40

20

0

1968-69 69-70 70-71 71-72

PRODUCTION

'000 tonnes

180

120

60

0

68-69 69-70 70-71 71-72

POWER

Lakh KWH

1200

GENERATED

CONSUMED

800

400

0

1967-68

68-69

69-70

70-71

8. Production of foodgrains in Himachal Pradesh, according to the final forecasts for 1970-71, was of the order of 949.7 thousand tonnes as against 870.7 thousand tonnes during 1967-68. The following table gives the production of foodgrains from 1967-68 to 1970-71:—

TABLE 3—PRODUCTION OF FOODGRAINS

					(‘000 tonnes)			
Crops					1967-68	1968-69	1969-70	1970-71
1.	Rice	..	..	..	112.2	98.5	113.8	123.9
2.	Maize	..	..	..	392.8	404.2	443.5	482.6
3.	Ragi	..	..	..	7.3	10.5	9.0	9.4
4.	Millet	..	..	..	12.6	18.0	19.3	20.8
5.	Wheat	..	..	..	268.1	295.3	255.7	246.2
6.	Barley	..	..	..	53.3	77.9	35.3	35.2
7.	Gram	..	..	..	9.4	5.7	9.2	16.5
8.	Other pulses	..	..	..	15.0	14.8	14.4	15.1
TOTAL FOODGRAINS					870.7	924.9	900.2	949.7

HORTICULTURE

9. By virtue of its varied altitudes and agro-climatic conditions, Himachal Pradesh possesses vast potentialities for growing a wide variety of fruits and cash crops such as apple, potato, ginger, vegetable seeds, etc. Accordingly, efforts are being directed towards exploiting these potentialities and emphasis is being laid on the development of horticulture, cash crops, etc., as is revealed by Table 4.

10. In this field, the Pradesh has taken big strides and has earned a name as a producer of quality apples, peaches, plums and other fruits. Horticulture development has significantly supplemented the otherwise meagre income of the people and has gone a long way in ameliorating their economic conditions. Its development has also helped in providing nutritive diet to the population, checking of soil erosion in the catchment areas of some of our great national projects like Bhakra Dam, Pong Dam, Beas-Satluj link Projects, etc., located in the Pradesh, increasing the employment potential and establishment of agriculture/horticulture-based industries both in and out side the Pradesh. The following table reveals the increasing trend of the area and production of fruits:—

TABLE 4—AREA AND PRODUCTION OF FRUITS

					Area (hectares)	Production (tonnes)
Year					2	3
1955-56					1,214	7,112
1960-61					6,009	19,019

1	2	3
	22,257	36,950
1965-66	34,418	81,080
1968-69	39,274	1,09,570
1969-70	44,130	1,48,530
1970-71	47,368	1,78,330
1971-72		

11. The production of seed potato has increased from 53.3 thousand tonnes in 1966-67 to 85.8 thousand tonnes in 1970-71.

POWER

12. Himachal Pradesh, which abounds in hilly streams, has a huge hydro-electric potential. While the total installed capacity at the beginning of the First Plan was 359 kw a number of major and minor electric generation schemes have been taken up. It is estimated that Himachal Pradesh has hydel power potential of 8.5 million kw. There is, therefore, immense scope for the development of the water resources of the Pradesh for generation of power for industrial, agricultural and domestic purposes.

13. In the First Plan period, about Rs. 21.59 lakhs were spent on electrification programmes. The work of rural electrification was taken up more vigorously in the Second Plan period during which 670 villages were electrified. In the Third Plan period the Nogli hydel scheme (first stage) with a generation of 500 kw was completed and work on the Mebar and Rukti hydel schemes in Kinnaur district was taken in hand. Also 1,046 villages were electrified. The entire programme cost the exchequer Rs. 186.36 lakhs. By the end of 1970-71, in all 4,164 villages had been electrified. The generation and consumption of electricity at the end of various plan periods is given in the following table:—

TABLE 5—POWER GENERATION AND CONSUMPTION

(In '000 Kwh)

Item	1960-61	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
1. Electricity generated ..	952	2,164	2,349	3,699	4,806	3,858	52,841
2. Electricity consumed:							
(a) Domestic consumption	954	3,385	5,296	9,955	13,973	14,105	15,171
(b) Commercial light and small power ..	962	2,887	3,619	6,729	10,099	8,909	9,936
(c) Industrial power ..	683	7,162	4,388	6,896	15,714	12,850	12,399
(d) Street lighting ..	308	374	510	673	1,173	858	884
(e) Irrigation and agriculture	5	—	73	168	532	636	756
(f) Public water works and sewage pumping ..	98	60	37	170	906	1,423	1,399
(g) Others ..	—	—	10,325	37,023	28,068	66,153	71,419
TOTAL ..	3,010	13,868	24,248	61,614	70,465	1,04,934	1,11,964

ROADS

14. Roads were almost non-existent in the former hilly states now forming the Pradesh. In 1950-51, there were only 43 kilometre of metalled and 137 kilometre of unmetalled roads. Since then in view of the priority given to the development of roads, the position has considerably improved as depicted in the table below:—



TABLE 6—ROADS (OTHER THAN NATIONAL HIGHWAYS)

(In kms)

Type of road	As on 31st March							
	1956	1961	1966	1967	1968	1969	1970	1971
Motorable double lane	—	346	421	1,361	1,378	1,434	1,493	1,526
Motorable single lane	587	1,097	1,716	2,630	2,927	4,763	5,200	5,844
Jeepable	684	522	810	864	942	795	550	608
Less than jeepable	1,142	1,367	1,354	1,857	2,085	2,143	2,200	2,400
TOTAL	2,413	3,332	4,301	6,712	7,332	9,135	9,443	10,378

EDUCATION

15. According to 1951 Census, the literacy in the Pradesh was as low as 4.8 per cent. In this background of appalling illiteracy and paucity of trained teachers it was a gigantic

task to re-organise and develop education in the newly formed State. The administration had, therefore, to prepare integrated plans for proper housing and for equipment of the existing schools besides the expansion of educational facilities commensurate with the needs of the people. The progress achieved in this field is obvious from the following table:—

TABLE 7—NUMBER OF EDUCATIONAL INSTITUTIONS, SCHOLARS AND TEACHERS

Item	1955-56	1961-62	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
Primary/Junior basic education:								
1. Institutions ..	808	1,341	2,044	3,529	3,646	3,663	3,758	3,758
2. Students (stage-wise)								
6—11 years ..	59,732	84,106	1,42,356	3,62,770	3,66,189	3,68,000	3,79,019	3,81,013
3. Teachers ..	1,398	2,833	4,590	8,221	8,488	8,383	7,731	7,607
Middle/Senior basic education:								
1. Institutions ..	122	207	309	557	621	670	704	738
2. Students (Stage-wise)								
11—14 years ..	11,265	19,829	36,830	93,334	1,05,804	1,11,306	1,17,806	1,20,111
3. Teachers ..	852	1,614	2,050	4,098	5,080	5,850	5,974	7,182
High Higher Secondary education:								
1. Institutions ..	45	92	129	317	340	378	402	430
2. Students (stage-wise)								
14—17 years ..	3,235	5,392	12,715	38,078	41,722	44,736	48,802	49,989
3. Teachers ..	745	1,859	2,398	6,133	6,103	6,280	6,572	7,425
Colleges of general education:								
1. Institutions ..	3	6	6	12	13	13	14	17
2. Students ..	496	874	2,032	5,213	6,662	9,300	10,200	11,400
3. Teachers ..	38	103	154	320	325	400	400	420

16. As a result of the expansion of educational facilities the percentage of literacy in the Pradesh has consistently improved and was 31.3 per cent according to 1971 Census.

MEDICAL AND PUBLIC HEALTH

17. At the time of formation of Himachal Pradesh, public health facilities were, at most of the places, completely lacking. Whatever facilities were available at that time were confined to urban areas only. The rural areas were more or less totally neglected in this regard. The number of hospitals and dispensaries inherited from the former states numbered only 88. The growth of medical and public health institutions is given in Table 8.

TABLE 8—GROWTH OF PUBLIC HEALTH INSTITUTIONS

Institutions	1950	1955	1960	1965	1970	1971
Hospitals and dispensaries	78	133	186	226	514	546
T.B. Sanatorium	1	1	1	1	5	5
T.B. Clinics	—	3	2	6	8	8
V.D. Clinics/units	2	5	20	47	65	66
Leprosy clinics	3	6	29	44	56	59
Leprosy control units	—	2	3	4	5	5
M.&C.W. centres	2	22	35	35	47	47
Dental clinics	—	6	8	10	20	20
P. H. centres	1	1	21	40	73	74
Family Planning centres	—	1	8	31	71	71

STATE INCOME

18. During the First and Second Five Year Plan periods, the rate of growth of net State Domestic product (State income) of Himachal Pradesh was 1.4 per cent and 4.8 per cent per annum as against 3.5 per cent and 4.0 per cent respectively, at the all India level. This growth rate, however, could not be maintained during the Third Plan period and the rate stood at 2.9 per cent per annum. The reasons for this abnormal low growth rate being lean agricultural production and external aggression. This lean performance of the economy during the Third Plan period was not restricted only to Himachal Pradesh as the position even at the all India level remained no better. The growth rate of national income declined to 2.6 per cent per annum during this period.

19. In the subsequent period viz., 1966-67 to 1969-70 the State income rose by 18.2 per cent which means an increase of about 6 per cent per annum. The corresponding increase at the all India level was 17.8 per cent or about 5.9 per cent per annum during the same period. The per capita income for Himachal Pradesh during the period 1966-67 to 1969-70 increased by 11.4 per cent i.e. by about 3.8 per cent per annum while the per capita income for all India rose by 10.2 per cent or by about 3.4 per cent per annum during the same period. The quick estimate of State income at 1960-61 (constant) prices for the year 1970-71 shows an increase of 2.8 per cent over the previous year. Based on this the per capita income witnessed an increase of only 0.8 per cent over the previous year.

APPROACH TO THE FIFTH PLAN

20. Inspite of the fact that much progress has been achieved since the formation of Himachal Pradesh by implementing different plans, it has been observed that benefits of the

planned economic development have not been shared equally by all classes. Efforts are now being made that benefits of economic development reach those classes and areas which have till now been neglected. Special programmes are proposed to be formulated and implemented effectively which benefit landless labour, the farmers with very small holdings and the unemployed. Special programmes are also proposed to be formulated for the development of remote and backward areas of the Pradesh.

21. According to 1971 census, the percentage of workers engaged in agriculture is as high as 75.85. Due to topographical conditions and small holdings, the agricultural land in the Pradesh is not capable of taking any more load which is expected in the years to come with the growth of population. It is, therefore, proposed to achieve optimum output per unit of area and per unit of man during the Fifth Plan period by popularising agriculture as a whole-time occupation, use of fertilisers and improved techniques, augmenting irrigation facilities, etc. These programmes will help the State to become self sufficient in foodgrains and maintaining buffer stocks to tide over the lean periods of agricultural weather. Programmes are also being chalked out to bring additional acreage under cash crops like potato, ginger and vegetables and also to locate regional high yielding varieties to increase the yield as well as return per hectare. Small Farmers' Development Agency (SFDA) and Marginal Farmers and Agricultural Labourers Agency (MFAL) programmes which are functioning in Sirmur and Solan districts will be continued during the Fifth Plan and further extended to other districts. It is proposed to extend minor and medium irrigation facilities and to bring 20,000 additional hectares under irrigation.

22. Area under fruits at the end of the Fourth Plan is expected to be of the order of 57,325 hectares. An additional area of 24,280 hectares is proposed to be brought under horticulture during the Fifth Plan. The entire horticultural development programme that has been taken up so far will be consolidated with a view to maximising production at minimum cost. Creation of an integrated marketing infra-structure for efficient marketing of horticultural produce and utilisation of surplus fruit which otherwise cannot be marketed is also among the schemes to be implemented during the Fifth Five Year Plan.

23. Forests in Himachal Pradesh cover an area of 21,744 square kilometres and form 38.5 per cent of the total area. This percentage falls short of the directive of the National Forest Policy, according to which 60 per cent of the area of this Pradesh should be under forests. Forests in Himachal are a potential source of revenue to the State exchequer, as over one-fourth of the total revenue is earned from this source. The revenue from forests has steadily increased from Rs. 63.43 lakhs in 1948-49 to Rs. 652.35 lakhs in 1969-70. It is expected to increase to Rs. 810.00 lakhs during 1971-72. Timber and resin constitute the major source of revenue. A major part of resin is processed in two Government Rosin and Turpentine Factories at Nahan and Bilaspur. The following work programmes are proposed to be undertaken during the Fifth Five Year Plan:—

- (i) intensification of management of about 19,000 square kilometres reserved and protected forests to secure improved protection/conservation and raising

the production level commensurate with the potential of the area;

- (ii) complete utilisation of the forest produce for industrial and agricultural purposes;
- (iii) demarcation and settlement of wooded areas under the Indian Forests Act to be brought under intensive scientific management in line with the demarcated and reserved forests; and
- (iv) identification of such areas in undemarcated protected forests as are capable of supporting economic plantation and raising plantations with quick growing species in as concentrated a manner as possible to secure industrialisation in the long run.

24. Besides these, effective steps will be taken to combat soil erosion, strengthening of infrastructure, expansion of grass lands, conservation of wild life and continuous evaluation of departmental performance.

25. Development of hydro-power will be taken up more intensively. Power is needed not only for domestic consumption but also for saving forest wealth and to give spurt to the growth of economy in the Pradesh by introducing appropriate technology in the agricultural and industrial fields. During the Fifth Five Year Plan, the following new projects are proposed to be taken up:—

TABLE 9—MAJOR HYDRO-ELECTRIC PROJECTS FOR FIFTH PLAN

Name of the project	Likely cost (Rs. in crores)	Installed capacity (MW)	Year of starting	Amount to be spent during Fifth Plan (Rs. in crores)
Bhaba Project	14	150	1974-75	13
Nathpa-Jhakri Project	130	1,000	1975-76	16
Dadahu Project	45	100	1976-77	11
Baspa Project	40	400	1976-77	9

26. In addition to above, the following medium/small and micro projects are also proposed to be executed in the Fifth Plan:—

TABLE 10—MEDIUM AND MICRO HYDRO-ELECTRIC PROJECTS FOR FIFTH PLAN

Name of project	Likely cost (Rs. in crores)	Installed capacity (MW)	Year of starting	Amount to be spent during the Fifth Plan (Rs. in crores)
1	2	3	4	5
<i>Medium Projects :</i>				
1. Andhra (Simla district)	1.95	6	1974-75	1.95
2. Malana (Kulu district)	12.50	75	1974-75	10.50

1	2	3	4	5
3. Baner (Kangra district) ..	1.05	6	1974-75	1.05
4. Bassi (Augumentation) ..	2.00	15	1974-75	2.00
5. Neogal (Kangra district) ..	1.17	4.5	1974-75	1.17
6. Thiroth Nallah (Lahaul Spiti district) ..	0.50	1	1974-75	0.50
<i>Micro-projects:</i>				
1. Rong-tong ..	0.20	200 KW	1974-75	0.20
2. Killar ..	0.22	200 KW	1974-75	0.22
3. Holi ..	0.30	500 KW	1974-75	0.30

27. Because of its topographical location and inherent handicaps, Himachal Pradesh has remained an industrially backward State. Only a few industries are functioning in the State. The number of registered factories per thousand square kilometre of area was only 3.0 in 1970 against the all-India figure of 24.0 and the number of industrial workers per lakh of population was 327 against 902 for all India. Thus during the Fifth Five Year Plan it is proposed to make an all out effort to give a spurt to the industrial growth in the State by establishing large and medium scale industries which need dust-free and cool climate like precision instruments etc., besides the one for which raw material is available in the State itself.

28. The handicap that the entrepreneurs are shy of investing capital without incentives and safeguards in view of locational disadvantages is proposed to be overcome by setting up of both large and small scale units in the joint sector or in the public sector.

29. With a view to provide rural employment, the development of sericulture industry, tea industry, handicrafts and khadi and village industries is also envisaged during the Fifth Five Year Plan.

30. No effort, whether on the fronts of horticulture, agriculture, power generation, industrial or tourist activity, would be purposeful unless accompanied by a simultaneous construction of link roads. In the meeting of all the State Chief Engineers held in 1956, a target of 32 kilometres of road per 100 square kilometres of area by the year 1981 was set up. For hilly areas, this figure was to be doubled i.e., 64 kilometres of road per 100 square kilometres of area on account of the circuitous and winding nature of roads.

31. By the end of the Fourth Plan, the State would have 8,790 kilometres of surfaced and un-surfaced motorable roads which gives a density figure of 15.7 kilometres of road per 100 square kilometres of area. Due to paucity of funds, the target of 64 kilometres per 100 square kilometres of area by 1981 seems to be a remote possibility. It is proposed to reach a

level of 48 kilometres per 100 square kilometres by 1994 i.e., the end of the Eighth Five Year Plan.

32. During the Fifth Five Year Plan it is proposed to construct 2,500 kilometres of roads raising the density of road to the modest level of 20 kilometres of road per 100 square kilometres of area.

33. In the field of elementary education, it is estimated that by the end of the Fourth Plan about 86 per cent of the children in the age group 6 to 11 years will be attending schools. The recommendations of the Education Commission are that all the children in the age group 6—14 are enrolled in the schools. In Himachal Pradesh, it is proposed to have 100 per cent enrolment for the age group 6—11 years and 72 per cent in the age group 11—14 years by the Fifth Plan end. In order to achieve this objective it is estimated that about 2,100 new primary schools will have to be opened and 800 primary schools upgraded.

34. The total enrolment of students in secondary schools which is likely to be of the order of 23 per cent by the end of Fourth Plan is proposed to be increased to 30 per cent during the Fifth Plan period. To achieve this objective, about 150 middle schools will have to be upgraded. Besides this, it is proposed to probe into the feasibility of opening junior colleges, introduce vocational courses, take measures for qualitative improvement, undertake special programmes for girls' education and special programmes for backward areas.

35. The total number of students at the college stage is estimated around 0.18 lakh (boys 0.14 lakh, girls 0.04 lakh) which is about 4 per cent of the population in the age-group 17—23 years. To bring about improvement in this unsatisfactory situation, additional facilities are proposed to be provided.

36. It is estimated that 25,000 adults will be made literate during the Fourth Plan period. A massive programme not only to increase the percentage of literacy (which is 31.3 per cent according to 1971 census) substantially but also to remove regional imbalances will be undertaken in the near future. It is also proposed to provide library service at the village and the block levels. It will not only sustain the literacy programme but also serve as a source of information, general knowledge and education to the people.

37. To meet the needs of a fast developing state like Himachal Pradesh, technically trained personnel to construct its hydro-electric projects, roads, buildings, unique system of irrigation, water supply, industries, etc., will be required. Technical education will, therefore, be promoted and improved to meet such requirements.

38. In a welfare state the medical and public health activities have dichotomous importance i.e., curative and preventive and, therefore, the enhancement of medical and public health facilities occupy a significant place. Such activities include improvement of

environmental sanitation, control of communicable diseases and provision of services like maternity and child welfare, health education, etc.

39. During the Fifth-Five Year Plan, it is proposed to standardise the existing units and to increase the number of primary health centres and sub-centres so as to ensure that they do not cater to more than 25 thousand and three thousand population, respectively. Each district hospital will have 200 beds. Besides, a 50 bedded mental hospital will also be started. State level hospital will be provided with highly specialised services in every branch of medicine apart from increasing its bed strength to 500.

40. Besides, the present National Small Pox Eradication, T.B. Control, V.D. Control, Malaria Control, Leprosy Control and National Trachoma Control programmes will continue. Buildings both residential as well as for the Medical College and equipment to the Medical College, Simla will be provided. Schemes for urban development, sanitation and urban water supply will be taken up.

EDUCATIONAL SCENE IN HIMACHAL PRADESH

—Dr. R. K. Singh,
Vice-Chancellor,
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This article is meant to deal mainly with the problems of higher education in Himachal Pradesh and the ways in which they should be tackled keeping in view the resources as well as the requirements of the State. But since education at higher stages is linked to and is also based on the lower stages of education, it would not be out of place to give a brief survey of school education in the Pradesh.

2. Even a cursory look at the educational statistics is sufficient to convince any one that achievements of the State at the lower stages of education are quite impressive. At primary stage, the enrolment figures constitute 85.3 per cent of the population in the age group of 6—11 while the corresponding percentage for the comparatively more prosperous States of Punjab, Haryana and for the entire country are 74.4, 62.0 and 80.5, respectively. Similarly at the middle stage also, Himachal Pradesh has an edge over these States. The enrolment figures as percentage of population in the age group of 11—14 for Himachal Pradesh, Punjab, Haryana and the whole of India are 55.0; 49.0; 47.5 and 34.2, respectively.

3. This record, impressive as it is, becomes even more spectacular when viewed against the background of difficulties the State had to face to reach these heights. Himachal Pradesh was initially formed by the political agglomeration of 31 erstwhile princely states and some territories of the former British India. One thing that was common to all these areas was the all round backwardness including that in the sphere of education. Not only that the Himachal Pradesh Government suffered from this initial handicap, the path of progress was uphill and very arduous due to certain factors. Means of transport were virtually non-existent, density of population was very low and the entire terrain hilly. These factors were and still are in operation in a very pronounced manner especially in the border districts of Lahaul and Spiti and Kinnaur where the density of population is as low as 2 and 8 per square kilometre, respectively.

4. If the achievement of physical targets and the difficulties involved in the process are viewed together, it is not difficult to conclude that the financial cost at which all this has been done must be very high indeed. Since many of the difficulties explained above are still present, the cost at which education is being provided to the people in Himachal Pradesh continues to be high. In 1967-68, for example, the average annual cost per pupil at the primary, middle and secondary stages in Himachal Pradesh was higher in Himachal Pradesh than in the neighbouring States of Punjab and Haryana. This is clear from the following figures:—

TABLE NO. 1—AVERAGE ANNUAL COST PER PUPIL

(In Rupees)

Name of State	Primary (6—11 years)	Middle (11—14 years)	Secondary (14—17 years)
Himachal Pradesh	72.1	128.1	135.7
Punjab	70.2	96.4	111.7
Haryana	46.4	63.5	88.7

5. The conclusion drawn above is further strengthened by the fact that in 1967-68 Himachal Pradesh spent 3.7 per cent of its domestic net income on education while the corresponding percentage figures for the Punjab, Haryana and India as a whole were 2.3; 2.1 and 2.7, respectively.

6. Though achieved at a fairly high cost, yet the performance in the field of education is such which any government can be legitimately proud of. But while past achievements are very important, what is still more important is the future development of education. It is an established fact that in every field, and more particularly in education, the quality is more important than quantity. Without in any way meaning to detract from the past performance, a caution may be given that there is an urgent need to check on the quality of education imparted at each level and to see that quantity and quality go side by side. Quality of education, especially at lower levels, is more or less directly proportional to the effectiveness of the supervisory staff. Due to topographical conditions, the supervisory staff in this State is not likely to function as effectively as desirable. It may be advisable to deploy the supervisory staff in such a manner that there is one Supervisor (or whatever he is called) for every 20 schools or so. The Supervisor, with his headquarters at a central place in his jurisdiction, could act as a sort of manager of these schools. He could render guidance and help to the schools and thus help in the improvement of the quality of teaching. He should be held responsible for the efficient working of the schools under his charge.

7. So far as higher education is concerned, there has been phenomenal expansion of facilities in the State since 1948. Starting with one degree college in 1948, the State can now

boast of as many as 18 Arts and Science Colleges (with evening classes in Arts subjects attached to three of them), a Medical College and two Colleges of Agriculture. Besides this, there are eight institutions of higher learning in Sanskrit. At the apex is a University with the Agricultural Complex as its important but integral part. These achievements are as significant as those at lower stages. The existing facilities appear to be quite adequate for a State with a small population of only 34.60 lakhs.

8. But the comparative educational statistics published in 1971 by the Ministry of Education and Social Welfare, Government of India show that 4 per cent of the population in the age group of 17—23 is enrolled in the Arts and Science Colleges in Himachal Pradesh while the corresponding percentage for the Punjab and Haryana is 5.8 and 5.7, respectively. These statistics show that Himachal Pradesh is still lagging behind in the field of college education. As such there is still some scope for its expansion. This may be one of the reasons why there is an insistent demand from certain areas of the Pradesh for the opening of new degree colleges—government or private. It may become difficult to resist such demands. But the State has reached a stage in the expansion of education where a good deal of thinking is urgently required to work out a strategy for its future development. Such a strategy has to be pragmatic and its framers must take into consideration some important and relevant factors as have been detailed in the following paragraphs.

9. The State has a small population which is almost equal to the size of population in comparatively larger districts situated in the plains. But because of the hilly terrain of the State, the density of population, as shown below., is very low:—

TABLE NO. 2—DENSITY OF POPULATION

Name of State				Area (sq. km.)	Total population (in lakhs)	Density of population (per sq. km.)
Himachal Pradesh				56,000	34.60	62
Punjab				50,000	135.51	271
Haryana				44,000	100.37	288
India				32.81 lakhs	5479.50	167

10. Efficient administration and proper implementation of welfare programmes required the division of the State into districts, each with a small size of population though covering a wide area. Consequently, the entire State has 12 districts at present. This arrangement may be administratively convenient but at the same time it is financially very expensive. All administrative, developmental and welfare departments, besides having offices at the State level, have their offices at district and lower levels too. Along with this, some institutions and autonomous bodies have also been established at the State level. As a result of this and

the usual paraphernalia that goes with offices, the governmental machinery has expanded out of all proportions to the size of the population and is putting a lot of strain on the State exchequer. It is estimated that about 8.5 per cent of the families in the State are dependent on Government service.

11. On the top of all this, the rates of salaries and allowances are among the highest in the country. For example, according to the statistics released by the Ministry of Education and Youth Welfare, Government of India in 1971, the average monthly salary of a college teacher in Himachal Pradesh in 1967-68 was Rs. 535.8 while for the Punjab, Haryana and the entire country the corresponding figures were Rs. 403.8, Rs. 394.4 and Rs. 415.3 respectively. No wonder, the budget provisions for 1971-72 show the following percentage of the non-plan budget to the education budget as a whole:—

TABLE NO. 3--EDUCATION BUDGET AS PERCENTAGE TO TOTAL BUDGET

Name of area	Non-plan budget as percentage of education budget				
Himachal Pradesh	..	..	..	..	90.9
Punjab	..	..	..	..	87.8
Haryana	..	..	..	..	80.4
India	..	..	..	..	87.2

12. Even the per capita expenditure on education is as high as Rs. 41.01 while it is Rs. 25.78, Rs. 21.21 and Rs. 23.50 for the Punjab, Haryana and the entire country, respectively.

13. Under the circumstances explained above, any further increase in the number of employees will put additional strain on the State exchequer and this burden may become almost unbearable. So the strategy of development in future has to be such as ensures utmost economy without impairing efficiency. It may not always be possible in all fields. But in the field of education, this objective can be achieved with careful planning.

14. While planning for future, the existing financial resources of the State cannot be lost sight of. Per capita income in Himachal Pradesh is not very high. As per 1969-70 figures, it was Rs. 563 in Himachal Pradesh, Rs. 945 in the Punjab and Rs. 788 in Haryana. It is not difficult to conclude from these figures that taxable capacity of the people in Himachal Pradesh is rather low. Factors like small population, uneven distribution of income, preponderance of rural population and absence of large scale industries lower the taxable capacity still further. This is another reason for effecting economy in State expenditure wherever it is feasible.

15. Another factor that has to be borne in mind while planning for the future development of education in the State is the employment potential for the educated youth. Since large

scale industries are virtually non-existent and scope for employment in commercial and tertiary occupations is limited, educated young men and women look up to the Government for the provision of employment to a greater degree than in other States. As explained earlier, the Government is not in a position to absorb all educated people in service. In case, this factor is ignored while planning for future, there is bound to be wastage and frustration. This may ultimately lead to political trouble. Last year, for example, admissions to all Colleges of Education in the State had to be stopped because due to faulty planning the number of unemployed trained teachers far exceeded the number of vacancies in the schools. This example underscores the urgency of careful advanced planning especially in the field of educational development.

16. In the light of the various factors explained in the foregoing paragraphs, the following suggestions may be considered while planning for the future development of education in this Pradesh.

(a) Demand for the establishment of more degree colleges should be resisted. The cost of providing college education is already very high. It is Rs. 450.1 per pupil as compared to Rs. 349.2 and Rs. 329.8 in Punjab and Haryana, respectively. In case, the demand for opening more colleges is conceded, either the total cost will shoot up or the existing resources will have to be spread more thinly over a larger number of institutions. In the former case, the burden on the State finances will increase appreciably without any corresponding gain while in the latter case the quality of education will suffer. Neither of these two courses may be adopted. But at the same time, it is most essential to provide equality of educational opportunities. There are boys and girls who come from distant places to the colleges. For such students education in a college is very expensive at present. So, it is suggested that instead of opening more colleges adequate hostel facilities at subsidised rates be provided in the existing colleges for the benefit of students. At the same time undergraduate teaching facilities in arts and basic science subjects, along with hostel facilities, be provided in the existing specialised institutions like the Colleges of Agriculture at Palampur and Solan. Expansion of educational facilities in this manner would be more economical and quality of education too will not suffer.

(b) The programme of teacher education and research is very important because improvement in the quality of education at the school and ultimately at college level depends on proper formulation and successful implementation of such a programme. Besides training people for the teaching profession, the other objective of this programme should be to provide in-service education as well as to promote research on various educational problems with an inter-disciplinary approach. Any institution that is burdened with such an onerous responsibility must be staffed by experts in different fields and must have a strong base for research. Man power, physical and financial resources must be utilised in a very economical manner. Instead of dissipating funds and resources on different parallel institutions, it would be very desirable to pool all such resources and set up a comprehensive institution to be known as

School of Education. The existing Department of Education in the University can provide a nucleus for it. The State Government and the University can act in close co-ordination to strengthen the proposed School of Education by jointly evolving a sound programme of teacher training and educational research. The present functions of the Himachal Pradesh Government Education Department in this field can be taken over by the School of Education with advantage to all concerned. The quality of teaching and research will improve and the policy of annual intake of trainees can also be formulated in consultation with the Education Department. The Government might have stopped admission to B.Ed. course but with the expansion of school education in the Fifth Five Year Plan period, the unemployed trained teachers will be absorbed and the teacher training programme will have to be started again.

(c) The University in Himachal Pradesh should not provide for highly specialised studies. In any dynamically conceived and pragmatic scheme of education, the provision of educational facilities has to be linked with the requirements of the society. As explained in one of the foregoing paragraphs, scope for the employment of the beneficiaries of highly specialised studies is limited in Himachal Pradesh. So provision of such facilities can prove to be a heavy burden without any corresponding benefit. If, however, the University is called upon to educate people to cater to the requirements of the country as a whole, specialised studies can be arranged for. But in that case, it is but fair that the financial burden involved must be borne by some agency other than the Himachal Pradesh Government. Of course, it would be wrong to deny the opportunities of specialised studies to some really talented and interested young men and women. They probably can compete well with others and find employment somewhere in the country. For their benefit, a scheme of liberal scholarships for study in different fields can be introduced. Students selected under the scheme can be sent to other universities for receiving education. This would certainly be more economical.

(d) Sometimes a demand is voiced in certain quarters that instead of one, there should be two universities in Himachal Pradesh—one for general education and the other for agriculture. How far is this demand justified can be judged from the following comparative figures:—

TABLE NO. 3—UNIVERSITY POPULATION RATIO

Name of State/area	No. of Universities including institutions deemed to be Universities	Population in lakhs	University/Population ratio
India	94	5479.50	1: 58.29
Punjab	3	135.51	1: 45.17
Haryana	2	100.37	1: 50.18
Uttar Pradesh	13	883.65	1: 67.97
Himachal Pradesh	1	34.60	1: 34.60

In case another university is created in this Pradesh, the ratio in Himachal Pradesh will change to 1:17.30 which is almost four times the ratio in Uttar Pradesh.

17. Needless to say that in the existing set up the Agricultural Complex of the University enjoys all the functional and financial autonomy as envisaged in the Act and the statutes drafted on the recommendations of an Expert Committee with representatives of the I.C.A.R. on it. The Committee thoroughly discussed the pros and cons of establishing two universities in Himachal Pradesh and ultimately recommended the establishment of one multi-faculty university. This recommendation was accepted. As required by the Act, Board of Management has been constituted to govern the Agricultural Complex. The Agricultural Production Commissioner, Himachal Pradesh, Directors of the concerned State Departments, Deputy Director General, I.C.A.R. and Director of Research, Punjab Agricultural University are the members of the Board and a full-fledged Dean is the executive head of the Agricultural Complex. The Faculty of Agriculture is free to draw up its own academic and research programmes.

18. The enrolment figures in the College of Agriculture at Solan and Palampur are given below:—

TABLE NO. 5—ENOLMENT IN AGRICULTURAL COLLEGES

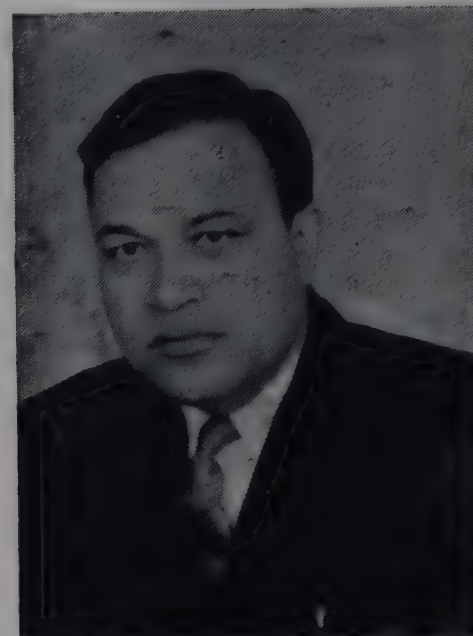
Class	College of Agri- culture, Solan	College of Agri- culture, Palampur	Total
B.Sc., (Agr.) Part I, II, III and IV	.. 138	200	338
M.Sc. (Agr.) Part I and II ..	.. 33	41	74
TOTAL ..	.. 171	241	412

The employment potentiality of trained personnel in agriculture is very meagre. Not more than fifty graduates/post-graduates can find employment in Himachal Pradesh every year. There is already wide-spread unemployment among agricultural graduates. They have even formed an association to press their claim for government jobs. So there is a need to restrict the number of admissions. Even if the present enrolment figures remain unaltered, the establishment of a separate Agricultural University is not warranted.

19. It may also be added that the maintenance of even one University is putting a good deal of strain on the State finances. The administration is already top heavy in the field of agriculture. Establishment of another university will certainly add to this burden without corresponding gain. At present different wings of the university are getting grants from some central agencies. With the passage of time, however, these grants are likely to taper off and the burden of maintaining two separate universities will become almost unbearable for this State. Hence, it would be in the best interests of the people of this State if one university looks after all fields of education.

GROWING NEEDS OF A STATE—PROBLEMS BEFORE STATISTICIANS

—B. C. Negi,
*Secretary (Economics and Statistics),
Himachal Pradesh.*



Prior to the thirties, statistical requirement in the country was attuned to the needs of administration and did not have any peremptory role to play in shaping the policies. Outside the bureaucracy, no organisation specially for statistical information, was built up in any field since the then rulers were complacent with an apocryphal euphoria and cared little about people's real needs and requirements. Some sporadic studies which were more fortuitous in nature were conducted into the economic and social conditions of workers in some of the industrially important States. It was in this context that the Royal Commission on Labour (1931) rightly stressed the need for collection of reliable and representative data through sound statistical methods. In 1934, the Bowley Robertson Committee reporting on the possibility of an 'Economic Census in India' made a series of recommendations in regard to statistics of production, prices, wages and profits. As an aftermath of the Second World War, the economic condition in the country deteriorated and the industrial workers demanded wage rise. Since then a number of notable developments took place—the Directorate of Cost of Living Index Scheme (1942) was set up for compiling index numbers; investigation into the trade disputes was done between the Post and Telegraphs Department and its non-gazetted employees by Justice Rajadhyaksha; the Rege Committee (1944) was appointed to collect data on employment, wages and earnings of industrial labour, etc. Thus, the Second World War provided the genesis for a statistical system in India just as the Industrial Revolution was the precursor of specific studies of the working and living conditions of labour in England in the 19th century. It was in 1949, that the Central Statistical Organisation (C.S.O.) was created for laying down uniform standards and for co-ordinating the activities of various statistical agencies. Simultaneously, in many States, a Directorate of Economics and Statistics or a Statistical Bureau was established with more or less a similar purpose. A multipurpose National Sample Survey Scheme (N.S.S.) was initiated in 1950 to take up the investigational work required for a better understanding of the behaviour of the economy. With the advent of planning, the '*amicus curiae*' attitude of the administrators vanished and

activities in all fields of research and statistics received a further impetus in 1950. New type of statistics were sought on different aspects of economic development. The evaluation studies for assessing plan progress and for introduction of new techniques of planning gained importance. Now, when the Planners are laying considerable stress on regional planning and district plans whereby the planning is proposed to be taken to the grass roots, it becomes all the more necessary to have proper statistical agencies not only at Central, State and District levels but also at the levels below. Thus, statistics has become an inevitable tool in the realm of planning.

2.. The centrally administered territory of Himachal Pradesh (formerly a Part 'C' State) came into existence in 1948 as a result of integration of 30 and odd Punjab Hill States. The statistical activities, whatsoever they may have been in the erstwhile princely States, were completely integrated with administrative functions. The administrative needs of these States were few and data, whatever available, used to be collected in connection with the execution of main administrative functions viz., maintenance of law and order and collection of land revenue. Moreover, all the statistical data which originated as a bye-product of administration were fragmentary, incoherent and undependable and had, therefore, little practical utility from the stand-point of providing an overall measure of economic and social development. The Government of Himachal Pradesh, with the passage of time, came to realise the seriousness of the lacunae in the statistical field, more so, when the Pradesh's First Five Year Plan was drawn up. It was in this context that the then Himachal Pradesh Government sanctioned the creation of the Directorate of Economics and Statistics in 1955 which started functioning with effect from January, 1956. Besides serving as a central co-ordinating organisation in respect of all economic and statistical data collected within the State, the Directorate is charged with the important task of bringing about necessary improvements in the range, quality and usefulness of statistical data. For the effective formulation of policies, the Directorate is also supposed to construct various indices of economic activity and to conduct socio-economic enquiries as required by the administration from time to time.

3. The setting up of a Directorate of Economics and Statistics is certainly not the last word in the field of statistical development. Economists and Statisticians cannot be kept sequestered. As sentinels or watch-dog of the economy they are required to function as eyes of the administrators. It, therefore, becomes all the more necessary for the administrators to appreciate and understand the importance of data-base analysis for policy formulation. The lack of understanding and mutual co-ordination between the administrators and the Economists/Statisticians has resulted in innumerable gaps and deficiencies in our economic statistics. Now, the Planning Commission have started feeling the urgent need of improving the quality of our economic statistics. This nevertheless calls for collection of proper data before policy decisions are taken and for ensuring timeliness of data so that they can serve their primary function of being an input for decision making. Time perhaps has arrived when the training courses of all concerned with the administration of developmental planning need to be geared up so as also to include *inter alia* the courses in proper use of economic statistics.

Without this, the wide gulf that exists between the Planners and Statisticians on the one hand and the administrators on the other cannot be narrowed down.

4. A vast mass of statistical data is regularly collected and compiled by the agencies and the departments concerned all of which is not utilised properly. One of the main reasons for the non-utilization of this data is the time-lag with which it is made available. This is the primary complaint which the administrators have against the data collecting agencies. The second main hurdle in the proper utilisation of data is its reliability. It really becomes difficult to use discretion when the statistical agency comes out with a set of figures which are entirely divergent with the one prepared by the departments concerned for the same period. The time-lag in the collection of data and its reliability, specially the administrative statistics, can certainly be improved upon with a little more effort in the right direction which calls for a rigid adherence to a specified time schedule and proper co-ordination between the statistical agencies and the departments concerned. This certainly is not an easy task but at the same time it has got to be achieved to augment the meaningfulness of the statistics. Almost every important Government Department now employs statistical personnel for collection of data though the tendency to entrust this important assignment to other untrained and clerical staff cannot be completely ruled out. This certainly is not a healthy development. It is now felt in almost all the quarters that an integrated economic and statistical service should be created in the State to cater to the needs and requirements of the various departments. The Government of Himachal Pradesh is already apprised of this important problem and is seriously thinking to create an integrated Economic and Statistical Service in the State.

5. Collection of data either from the records or through census or sample surveys is the most important primary work of all statistical agencies. In most of the cases data has to be collected through voluntary efforts. Whether the data are collected statutorily or through voluntary efforts, it is imperative that those who are charged with the important function of data collection should be highly trained and inculcate full sense of involvement in their jobs. The collection of statistical data cannot, therefore, be left to the novices and ill-equipped personnel. In this context, it will not be out of place to mention about 'Patwari' who is responsible for collection of most of our agricultural statistics. No significant improvement in many types of agricultural statistics could be expected so long as the Patwari continues to remain the primary collecting agency. It is a point worth consideration whether this job could be transferred to a new type of Statistical Patwari. However, for the time being we shall have to live with the patwari-system with all its shortcomings and defects. In all other fields of statistics, except for agriculture, trained personnel are being utilised for data collection. This is mainly due to linkage of agriculture with revenue work. Of late, crop-cutting experiments have been introduced in respect of a few major crops for providing estimates of area and yield but that is not sufficient. The scope and coverage of such experiments will have to be extended to all crops and a proper machinery created for effective conduct and supervision of crop-cutting experiments.

6. The unsatisfactory situation that exists regarding the maintenance and dissemination of statistical data does not need to be over-emphasised and there is urgent need for appropriate arrangements to make the information available, whenever required, with the requisite speed and in sufficient details. In this context, setting up of a data bank is perhaps the best approach. The data bank should be capable of meeting the user requirements at all levels and store all relevant information required by the users. The 'Computer' has an important role to play in the operations of the data bank in order to provide rapid processing of information, its storage and retrieval. But the computer equipment requires a high capital investment and, perhaps, for the time being it may not be best suited for a small State like Himachal Pradesh. So, at present, we will have to be satisfied with the conventional methods of storage and processing to the maximum extent possible.

7. It is an admitted fact that there is generally a frightening delay in the publication of statistical material mainly on account of the multitude of items. If some priority items could be selected for advance publication it would perhaps be possible to get them collected and published in a much shorter period. It is a common knowledge that the printing of statistical publications gets unduly delayed during the Assembly Sessions when these items are given low priority by the Government Press. To reduce this delay, the printing programme of the basic statistical publications of the State requires to be suitably phased in order to minimise the clash with the printing work during Assembly Sessions. The best recourse, however, will be establishing a new press for attending exclusively to the printing of statistical matters of the various departments.

8. In recent years, there has been a growing stress on regional and sub-regional planning and, therefore, there is great need for developing systematic and reliable statistics at the regional and local levels. For regional planning, including one directed for specific regions i.e., development of backward areas, border areas, tribal areas or crash programmes for rural development which have been introduced in recent years, statistics are required to be classified according to State, districts, tehsils, blocks and even village levels. Besides routine and other regular data, the statistics needed for district planning and as elaborated by the Planning Commission in their guide lines with suitable modifications will have to be collected. All this is good and beyond criticism. But when statistics are collected and compiled at regional or sub-regional levels, the cost of collection and compilation is bound to increase. A small State like Himachal Pradesh cannot afford to create a vast machinery devoted exclusively to collection of statistical data. This obviously means that methods will have to be found to secure reliable information at the district level, etc., with minimum additional cost. District or regional planning is necessary in order to remove the intra-State imbalances which in other words means decentralisation of the process of planning. The priorities and sectoral proposals will also have to be prepared at district and regional levels. All these district and regional plans will then be integrated into the State plans. With this aim in view, there will have to be a basic re-orientation in the entire pattern of planning. So first of all, it becomes necessary to fashion out that outlays will be marked for each district/region separately

both by the Planning Commission and the States and, secondly, once the district plans have been framed they will not be changed or altered in spite of the change in the administrative machinery or political set up. If once these basic questions are settled then arrangements could be made to collect the necessary statistical information at the desired levels, otherwise the entire data collected will just be a wasteful and academic exercise only. For a small State like Himachal Pradesh, which has two border districts (Kinnaur and Lahaul-Spiti) with its own typical problems of defence strategy and tribal population and five industrially backward districts (Kulu, Chamba and Kangra and above two districts) regional planning or district planning has little relevance to reality. In Himachal Pradesh, the topography, the climate, the altitude and the transport facility are bound to play an important role in its economic development. Thus, in case of entirely hilly State like Himachal Pradesh, the factors of development will be different than in the plains. In Himachal Pradesh, industries cannot be set up in all the districts due to obvious reasons. Similarly, agricultural production also cannot be increased uniformly in all the districts because the terraced fields and the valley area fields will differ considerably in production. That is why in Himachal Pradesh in spite of all possible efforts to narrow down the regional imbalances, it will be absolutely necessary to develop special pockets where agricultural production could be substantially increased and special industrial belts in some selected districts will have to be created where the cost of production does not become uneconomic. This however, does not mean that Himachal Pradesh should not prepare its district plans. District plans are so very necessary in order to know the exact levels of development that has taken place, the existing potentials which have hitherto remained untapped and to work out the strategy for future development in tune with the aspirations of the people.

9. Normally, the district statistical machinery should be capable of preparing district or tehsil level estimates of important statistical indicators or collection and maintenance of statistics relevant to district planning but the machinery at present is hardly adequate. The district offices find it difficult to prepare even tehsil level estimates mainly due to lack of proper statistical data. Thus, for the time being, it is extremely difficult to collect and maintain the tehsil level data through the meagre staff presently available for the District Statistical Offices.

10. The sectors for which planning could be done at tehsil level are agriculture, animal husbandry, small scale and cottage industries, education and health. Data for these sectors should, therefore, emerge on regular basis from the primary units i.e., revenue villages which should be consolidated at tehsil headquarters by an agency formed for the purpose. At present there is no permanent reporting agency except for the agricultural statistics from the basic village records. There is also no proper arrangement for registration of small scale and cottage industry units. It, therefore, appears to be necessary to prescribe a registration system in respect of small units. Such an arrangement will alone provide a basis for ensuring a complete coverage for collection of data from this sector.

11. The income computations in the country are presently done at the national and state levels. Such estimates are prepared by following both the product and income approaches. In respect of commodity producing sectors, the State Statistical Bureau prepares estimates according to the standard methodology laid down by the Central Statistical Organisation. In the case of non-commodity producing sectors, the bureau encounters considerable difficulties due to lack of data. With the current emphasis on district/regional level planning, the district/regional level income estimates will have to be an important tool for economic analysis. However, in case of districts, the income estimates have not so far been tried. In order to enable the State to plan from below i.e., with district as a unit, need for timely and regular availability of reliable data is highly essential. For this purpose, the district statistical offices will have to play a dominant role by accepting the onerous responsibility of collecting and co-ordinating all essential series of statistics necessary for computation of income originating within the district. This again calls for strengthening the district statistical machinery and whatever extra expenditure may have to be incurred in this regard would be compensated by the reliable district statistics that would be forthcoming and the extensive use these could be put to for district level planning.

12. In Himachal Pradesh, except for the estimates of State Income no other data is presently available on the per capita expenditure, consumption, indebtedness, savings, etc. Even the reliable estimates of area and yield of fruits and inflow of tourists which are so vital to the growth of Himachal's economy are not available. The small scale industry sector has also not been subjected to a meaningful statistical analysis. Statistics are also not available in regard to the building and construction activity, export and import of goods and the role played by the non-nationalised sector of the transport industry. These are some of the fields for which reliable data is absolutely necessary without which proper planning is not possible. If the existing statistical machinery at the disposal of the State is suitably geared up and adequate staff is provided to it, there is no reason as to why it should not be able to provide the much needed statistics in the above mentioned fields.

13. Before closing the article, it would be better to lay emphasis on two important points. Uptil now, no statistical scheme included in the Fourth Five Year Plan of the State as approved by the Working Group on 'Statistics' of the Planning Commission has so far been implemented. This perhaps is mainly due to non-creation of staff for this purpose. As statistics are important input ingredients relevant to the development planning, no time now should be lost in creating the adequate statistical machinery so that these important schemes could be executed. Due to non-utilisation of plan funds on the statistics side sometimes the allocated amount is diverted to other developmental heads. It will, therefore, be proper to treat 'Statistical Schemes' as earmarked sector and except for cases of extreme urgency its funds should not be diverted. The amount earmarked for statistics is already too meagre being a negligible fraction of the total plan outlay. In the Fourth Plan, Rs. 10 lakhs were allocated for 'Statistics' out of a total outlay of about Rs. 101 crores constituting about 0.1 per cent of the total— and it will be in the larger interests of the State to ensure that this

fractional outlay is properly utilised so that the statistical development in the State does not lag behind in comparison to other sister States.

14. Besides collecting, coordinating and supplying the administrative statistics, the State Statistical Bureau also conducts sample surveys on important socio-economic aspects. Such surveys normally provide the results at State level. This is not enough. Efforts from now onwards should be made to furnish the estimates of important data not only at the district level but also for the poorer sections of the society so that the administrators could have an exact idea of the number of really needy people and plan in that direction. These are some of the problems in the context of growing needs of Himachal Pradesh with which the statisticians or the economists are concerned. I would, therefore, once again like to emphasise that it is very important to have a sound statistical base in Himachal Pradesh and any further diffidence in this regard will be highly detrimental to proper planning.



CONSUMPTION PATTERN AND PRICE MOVEMENT IN HIMACHAL PRADESH

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Himachal Pradesh has completed 25 years of its existence. It was formed in 1948 by the integration of thirty and odd erstwhile princely States. The people of these areas were economically very backward and were largely living around the poverty line. There were no development plans formulated by the rulers of these States. The immediate task before the Government after formation of Himachal Pradesh, therefore, was to start a process of planned economic development.

2. Economic development is a complex process which brings about changes in the economic, social and cultural life of a population in the long run. However, the interest taken by the Government to accelerate the economic development of a region also involves inflationary methods of financing which while helping in an increase in money income does not let the real incomes rise to the same extent. A rise in real income raises the standard of living of the people, increases their capacity to consume, facilitates larger investment and thereby causes a greater demand for consumption and investment goods. However, when money income rises faster than real incomes this is the characteristic of inflation.

3. In the last 25 years concerted efforts have been made in the State to increase the level of production of different goods and services by formulating various development plans. These attempts have resulted in raising the levels of income and consumption expenditure of almost all groups of people. These have also helped in creating more employment opportunities for the people of the State and have opened new avenues of employment. In spite of all the sincere efforts made by the Government, millions of people are still hovering around the poverty line. According to a recent study@ made by the Federation of Chambers of Commerce and Industry, the per capita income in Himachal Pradesh was Rs. 725 per annum and 34.1 per cent of population was living below the poverty line assumed at a consumption level of Rs. 40.50 per capita per month in the urban sector. Prices are rising

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in the State at a rate faster than All-India level and severely hurting all but a few. Unemployment is also on the increase. The number of people seeking employment is increasing fast among the backward classes with a strong preference for white collared jobs and disinclination to grasp opportunities for self-employment. More and more people are, therefore, beginning to ask whether there is something radically deficient or wrong about our economic policies. Prices and employment are problems which are immediate and pressing. They can no longer be ignored. Rising prices can not only cause economic injustice and distress but also erode savings and hamper development. Arresting the increase in prices should, therefore, be the first priority with the State Government. What are the consumption habits of the people? What are the specific goods and services on which significant expenditure is being incurred by the people of Himachal Pradesh? How have the prices of the goods and services consumed by the people moved during the past years and why? What is the nature of the price behaviour of various groups of commodities over different years? Have the prices in Himachal Pradesh increased at a rate higher than that of All-India? These are some of the problems which have been analysed in this article.

4. The data on which the study is based were collected by the Labour Bureau, Simla an attached office of the Ministry of Labour and Rehabilitation, Government of India, through a Family Living Survey among the industrial workers in Himachal Pradesh* in 1965. The main purpose of this survey was to collect data of income, expenditure and consumption for deriving a weighting diagram for building up a series of Consumer Price Index Numbers for Industrial Workers in Himachal Pradesh. The survey covered workers employed in (i) Public Motor Transport, (ii) Factories, (iii) Mines and (iv) Plantations.

AVERAGE MONTHLY INCOME AND EXPENDITURE**PER FAMILY AND PER CAPITA

5. The average monthly income per family of industrial workers for the State as a whole was about Rs. 168 and the per capita income was about Rs. 57. The average monthly expenditure on all consumption goods and services, taxes, interest and litigation and remittance to dependents worked out to about Rs. 160 and the per capita expenditure was about Rs. 55 (Table 1). Thus the average monthly income per family was found to be marginally more than the average monthly expenditure per family showing thereby that the working class

*The hilly areas of the Punjab which were merged with Himachal Pradesh from 1st November, 1966 were excluded from the scope of the survey as these areas did not form part of Himachal Pradesh in 1965. Since then, no other survey has been conducted. The Consumer Price Index Number for Industrial Workers in Himachal Pradesh represents areas in Himachal Pradesh as it existed in 1965 and adjustments in weighting diagram have not been made to represent newly merged areas.

**Income includes income from paid employment, self-employment and income from other sources such as receipts from rented properties, etc. Expenditure includes all consumption expenditure and all non-consumption expenditure. For detailed discussions of concepts and definitions, reference may be made to General Report on Family Living Survey among Industrial Workers (1958-59)—Labour Bureau, Ministry of Labour and Rehabilitation, Government of India, Simla.

families were generally having a surplus budget. However, this was not so in all the areas covered in the survey and in 5 of the 12 localities covered, working class families showed deficit budgets.

TABLE 1—AVERAGE MONTHLY INCOME AND EXPENDITURE PER FAMILY AND PER CAPITA

Sl. No.	Centre	Average monthly			
		Income per family	Expenditure per family	Per capita income	Per capita expenditure
		Rs.	Rs.	Rs.	Rs.
1.	Bilaspur	146.64	147.34	60.38	60.67
2.	Chamba	162.47	156.22	59.51	57.22
3.	Chauntra	57.60	62.05	15.69	16.90
4.	Dhalli	147.90	145.88	76.36	75.32
5.	Drang	154.15	164.50	32.02	34.17
6.	Guma	127.38	132.08	32.20	33.38
7.	Jogindernagar	166.70	172.98	35.89	37.33
8.	Mandi	179.65	172.60	69.17	66.46
9.	Nahan	204.16	181.96	44.56	39.71
10.	Solan	146.68	140.88	44.98	43.20
11.	Suni	153.11	136.23	43.30	38.53
12.	Taradevi	165.51	157.13	61.68	58.56
All centres combined		168.35	159.93	57.00	54.62

6. The average monthly income per family varied from Rs. 57.60 at Chauntra—a plantation centre to Rs. 204.16 at Nahan a factory-cum-public motor transport centre. As was expected, the expenditure per family per month was recorded lowest and highest at Chauntra and Nahan Centres respectively. However, the per capita income and expenditure was highest at Dhalli—a public motor transport centre and lowest at Chauntra—a plantation centre.

EXPENDITURE PATTERN

7. As mentioned earlier, the main objective of this survey was to arrive at a consumption expenditure pattern for deriving the weighting diagram for compilation of Consumer Price Index Numbers for Industrial Workers in Himachal Pradesh. The average monthly consumption expenditure per family on various commodity groups and their percentage expenditure to total consumption expenditure for Himachal Pradesh as a whole is presented in Table 2.

TABLE 2—AVERAGE MONTHLY CONSUMPTION EXPENDITURE FOR FAMILY AND PERCENTAGE EXPENDITURE ON DIFFERENT GROUPS

Group	Average monthly consumption expenditure	Percentage to total consumption expenditure
	Rs.	
Food	84.72	59.71
Pan, supari, tobacco and intoxicants	6.87	4.84
Fuel and light	8.76	6.17
Housing	12.28	8.65
Clothing, bedding and footwear	11.37	8.01
Miscellaneous	17.90	12.62
TOTAL	141.90	100.00

8. Of the total consumption expenditure of Rs. 141.90, an expenditure of Rs. 84.72 or about 60% was incurred on food; Rs. 6.87 or about 5 % on pan, supari, tobacco and intoxicants; Rs. 8.76 or 6% on fuel and light; Rs. 12.28 on housing; Rs. 11.37 on clothing, bedding and footwear and Rs. 17.90 or about 13% on miscellaneous items like medical care, education, recreation and amusement, personal care and effects and other services.

PATTERN OF FOOD EXPENDITURE

9. Expenditure incurred on different groups of food commodities is given in Table 3.

TABLE 3—AVERAGE MONTHLY EXPENDITURE WITH CORRESPONDING PERCENTAGES ON DIFFERENT SUB-GROUPS OF FOOD ITEMS

Sub-groups	Average monthly food expenditure	Percentage to total food expenditure
	Rs.	
Cereals and products	24.10	28.45
Pulses and products	4.37	5.16
Oils and fats	4.34	5.12
Milk and products	13.42	15.84
Meat, fish and eggs	2.34	2.76
Vegetables and fruits	4.91	5.80
Condiments and spices	2.50	2.95
Other food	28.74	33.92
TOTAL	84.72	100.00

10. It would be seen from the above table that the working class families in Himachal Pradesh were incurring an expenditure of 34% of the total food expenditure on 'other food' which includes items like sugar, gur, snacks, beverages and 'prepared meals taken outside'.

Expenditure on 'other food' even exceeded the expenditure on cereals which is strikingly different from the results of similar surveys at different centres in India. This was in view of the fact that workers employed in public motor transport industry were mostly living alone at the places of their duty and taking meals in hotels, etc. Another striking feature of the food expenditure pattern was its percentage expenditure on milk products which has an important place in the balanced diet as they are rich in protein and vitamins A and D. It is also an indicator of the standard of living of workers.

EXPENDITURE PATTERN OF HIMACHAL PRADESH AND ALL-INDIA

11. It would be worth examining whether the expenditure pattern arrived at from the Family Living Survey for Industrial Workers at Himachal Pradesh is significantly different from that of All-India which has been derived by combining the expenditure data obtained from Family Living Surveys among Industrial Workers during 1958-59 for 50 centres and certain other nearby centres.

TABLE 4—COMPARATIVE EXPENDITURE PATTERN IN HIMACHAL PRADESH (percent)

Group	Himachal Pradesh	Yamunanagar (Haryana)	Srinagar (J&K)	Amritsar (Punjab)	All India
Food	59.71	60.7	63.4	57.7	60.92
Pan, supari, etc.	4.84	2.2	2.2	2.7	4.79
Fuel and light	6.17	4.3	9.7	5.4	5.77
Housing	8.65	7.6	8.8	5.3	6.26
Clothing, etc.	8.01	8.9	7.8	9.4	8.54
Miscellaneous	12.62	16.3	8.1	19.5	13.72
TOTAL	100.00	100.00	100.00	100.00	100.00

12. It appears from the above table that there is no striking difference in the expenditure pattern in Himachal Pradesh as compared to the All-India average consumer pattern; there are significant differences when we compare the same with certain nearby centres.

MOVEMENT OF CONSUMER PRICE IN HIMACHAL PRADESH

13. On the basis of the results of the Family Living Survey conducted in Himachal Pradesh in 1965, a series of Consumer Price Index Numbers for Industrial Workers in Himachal Pradesh on base 1965=100 is being compiled and published by the Labour Bureau. The Consumer Price Index Numbers for Industrial Workers in Himachal Pradesh *inter-alia* measure the percentage variation in the retail prices of a fixed basket of goods and services consumed by industrial workers in Himachal Pradesh. In the following paragraphs, an attempt has been made to analyse the movement of consumer prices on the basis of these index numbers.

14. *Rising prices from 1965 to 1969.*—With the out-break of Indo-Pakistan war in September, 1965, the prices of all essential commodities started looking up. There was an acute shortage of foodgrains and other food items in Himachal Pradesh further aggravated due to transport bottle-necks disturbing the distribution system.

15. The prices of all essential commodities in Himachal Pradesh were galloping up in line with the trend in neighbouring areas. The complete failure of rains and prevailing drought conditions in many States of India further aggravated the situation. The Consumer Price Index for Himachal Pradesh which stood at 105 in January, 1966 increased to 118 in December, 1966 or a rise of 13 points over a period of 11 months. The annual average index for 1966 stood at 111 representing an increase of 11 per cent over the previous year. The Consumer Price Index for Industrial Workers in Himachal Pradesh, month-wise indices as also the annual average for the period 1966 to 1969 are given in Table 5.

TABLE 5—CONSUMER PRICE INDEX NUMBERS FOR INDUSTRIAL WORKERS IN HIMACHAL PRADESH

(Base : 1965=100)

Year	MONTHS												Annual aver- age
	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
1966	105	105	106	107	109	111	113	112	113	114	116	118	111
1967	121	125	128	129	130	134	141	145	148	145	144	145	136
1968	144	143	142	140	137	136	134	134	136	138	137	136	138
1969	136	136	136	137	136	137	139	139	139	140	138	138	138

16. A highly inflationary condition had developed in our economy during and after the war. Himachal Pradesh was deficient in most of the consumer items like foodgrains, pulses, oils, etc., and these items were being imported by the traders. They made full use of the scarcity conditions and the prices of all the items were pushed up much more than what was reasonable. There was a sudden spurt in the speculative and hoarding activity also. From the level of 121 in January, 1967 the Consumer Price Index continued its upward journey reaching the peak level of 148 in September, 1967. Thus, there was an increase of 27 points or 22 percent in the General Index over a period of 8 months. There was a slight respite thereafter due to seasonal factors and the index stood at 145 in December, 1967. The annual average index for the year 1967 stood at 136, representing an increase of 25 points or 23 per cent over the level of 1966. This was a stage when prices tended to move higher and higher and conditions causing the rise in prices were ever present and there were no prospects of price rise coming to a stop at any point or getting stabilized. There was a fairly acute shortage of foodgrains like rice, wheat, etc. The prices of rice, wheat, gram and pulses had gone up exceptionally high and were almost doubled in the second half of 1967 as compared to those prevailing during 1965. Other articles contributing towards the rise in the index were edible oils, condiments and spices, gur and sugar. To arrest the rising trend in prices, the Government had started distribution of foodgrains and sugar through fair price shops. But the revision in the issue prices of foodgrains distributed through fair price/controlled shops also contributed towards the increase in the index. Prices and cost of living tended

to chase each other. Grant of increased dearness allowance, wages and salaries to workers had added to the purchasing power of the people and the pent up demand was exercising its influence over the price level.

17. During 1968, though the general index on an average registered a rise of 2 points as compared to 1967, it was negligible as compared to the rise in earlier years. Due to bumper *rabi* and *kharif* crops, the prices of essential food articles started tumbling down. The index from its level of 144 in January, 1968 fell to 134 in July, 1968 showing a decrease of 10 points over this period.

18. The downward trend noticed in Consumer Price Index for Himachal Pradesh from the beginning of 1968 continued up to December, 1968. The index remained more or less constant at the level of 136 during the first half of 1969. This fall was witnessed due to good *rabi* and *kharif* crops and consequent fall in the prices of foodgrains. Due to adequate supply of wheat and rice in the market, the controls on wheat and rice were removed and their distribution through fair price shops was stopped. There was a slight rise in the prices of rice and wheat due to lifting of rationing in the State. However, the State Consumer Price Index went up by 2 points each during September and October, 1968 as a result of abnormal rise in the prices of pulses, edible oils, condiments and spices and vegetables and fruits. The annual average index for 1969 remained at the same level as in 1968 which was 138. This phenomenon of decline in prices and comparative stability was witnessed for the first time after 4 years of un-remitting rise in the Himachal Pradesh Consumer Price Index.

19. *Inflationary trend in prices from 1970.*—The declining trend in the prices noticed during 1968 and early 1969 was completely reversed in 1970. The average index for 1970 stood at 145 registering a rise of 7 points or 5 per cent over its average level of 138 during 1969. Even the seasonal fall in the index which comes about towards the closing months was not noticed during 1970. The indices for the period 1970 to 1972 are given in Table 6 below.

TABLE 6—CONSUMER PRICE INDEX NUMBERS FOR INDUSTRIAL WORKERS IN HIMACHAL PRADESH

(Base : 1965=100)

Year	Month												Annual aver- age
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	
1970	..	140	141	142	144	144	145	146	146	147	147	148	145
1971	..	148	148	149	149	149	151	153	154	156	155	156	152
1972	..	158	159	160	160	159	160	161	162	163	164	..	161*

*The average for 1972 is based on eleven months, i.e., January, 1972 to November, 1972.

20. Items like edible oils, spices, vegetables and fruits even while having only low weight in the index basket, because prices of these items had risen exceptionally high, contributed significantly towards the rise in the index. The index continued to rise steadily throughout the year and reached the peak level of 148 during December, 1970. Other items responsible for pushing up the index were cigarettes, firewood, clothing and cinema charges. The salaried classes, fixed income groups and the ordinary man started groaning under the heavy weight of mounting prices. The only redeeming feature of the economy was that the prices of rice and wheat had remained more or less stable. It was due to the green revolution and bumper *rabi* and *kharif* crops.

21. The Consumer Price Index for Industrial Workers in Himachal Pradesh was stationary at 148 during the first two months of 1971. However, with the massive influx of refugees into India from Bangla Desh from March, 1971, the prices of essential commodities again started moving up. The Himachal Pradesh Consumer Price Index started rising in tune with the All-India Consumer Price Index and the rate of rise accelerated from June, 1971. The index stood at a prestigious level of 156 in September, 1971 or a rise of 7 points over a period of 4 months. This unusual movement in the index was due to normal seasonal upward trend as also due to a precipitous rise in the prices of pulses, meat, milk, vegetables and gur. Another contributing factor for pushing up the Consumer Price Index was abolition of the system of distribution of sugar through fair price shops from May, 1971. Rise in the prices of cigarettes, firewood, clothing and miscellaneous group items was also responsible for pushing up the index.

22. The war with Pakistan, in December, 1971 had put a great strain on the economy of the country as a whole and the inflationary pressure on the prices, in the State, witnessed during the previous two years continued to persist. The annual average index for 1971 stood at 152 which was 7 points or 5% higher as compared to 1970 level. The Consumer Price Index for Himachal Pradesh continued to rise steadily and stood at 164 during November, 1972 or a rise of about 64 per cent over its 1965 level.

23. The unprecedented rise in the prices of foodgrains, pulses, oils, sugar and gur is causing much concern to the Government and public alike. To keep the prices under check, the Government had adopted a number of measures like re-imposition of control over sugar and distribution of foodgrains through controlled shops.

VARIATIONS BY COMMODITY GROUPS

24. The upward trend in consumer prices in Himachal Pradesh has already been analysed for the period 1965 to 1972 in the preceding paragraphs. The smallest increase was reported in the year 1968-69 and the largest increase was recorded in the year 1967. There has been an annual rate of increase of 9 per cent over the last 7 years or a cumulative rate of growth of about 8 per cent. The consumer price index is a weighted average of several commodity groups and each commodity group index represents a weighted average of the

indices of numerous commodities. The prices of these commodities rarely change to the same extent and quite frequently some may even move in opposite directions. The major groups of commodities are food; *pan, supari*, tobacco and intoxicants; fuel and light; housing, clothing and miscellaneous. Food and miscellaneous groups have further sub-grouping of commodities.

25. Because of its heavy weight in the overall general index and due to its volatility, the food group is usually the most significant. Food supplies are relatively inflexible over short periods. A rapid increase in purchasing power, a crop failure, a transport bottle-neck or a surplus production due to favourable weather conditions may result in a change of food prices which may set off a general price movement. '*Pan, supari*, tobacco and intoxicants' prices also appear to be very sensitive, reflecting in part the indirect taxes and other levies imposed on these commodities from year to year.

26. Fuel and light prices generally lag behind in the initial phases because of their established prices or their regulation by the Government. Housing index is also slow to move owing in part to prevalence of long term rental contracts and in part due to enactment or various rent control acts. The prices of a variety of different items such as medical care, transport, entertainment and services are included in the miscellaneous group.

27. Tables 7 and 8 give the annual average group indices for the period 1966 to 1972 and variations in the relative movement of commodity group indices during the same period.

TABLE 7—CONSUMER PRICE INDEX NUMBERS FOR INDUSTRIAL WORKERS IN HIMACHAL PRADESH BY GROUPS

Groups	(Base 1965=100)						(Annual averages)
	Year						
	1966	1967	1968	1969	1970	1971	1972*
Food ..	114	150	151	145	149	154	164
Pan, Supari, Tobacco and intoxicants ..	106	124	136	153	169	189	201
Fuel and light ..	109	113	115	122	134	145	146
Housing ..	100	103	108	114	118	122	123
Clothing, bedding and foot- wear ..	106	120	123	129	140	154	163
Miscellaneous ..	110	118	119	128	142	152	161
General ..	111	136	138	138	145	152	161

Source :—Labour Bureau.

*The average for 1972 is based on index for eleven months, i.e., January, 1972 to November, 1972.

TABLE 8—VARIATIONS IN THE MOVEMENT OF GROUP INDICES OVER THE PREVIOUS YEAR

Group	1966	1967	1968	1969	1970	1971	1972
General Index (All Commodities)	.. +11	+25	+2	—	+ 7	+ 7	+ 9
Food	.. +14	+36	+ 1	— 6	+ 4	+ 5	+10
Pan, Supari, etc.	.. + 6	+18	+12	+17	+16	+20	+12
Fuel and light	.. + 9	+ 4	+ 2	+ 7	+12	+11	+ 1
Housing	.. —	+ 3	+ 5	+ 6	+ 4	+ 4	+ 1
Clothing, etc.	.. + 6	+14	+ 3	+ 6	+11	+14	+ 9
Miscellaneous	.. +10	+ 8	+ 1	+ 9	+14	+10	+ 9

28. During the up-swing of 1966-67, food prices led the way and the food group index was invariably much higher than the general index. *Pan, supari*, etc., prices continued to rise steadily. Housing index continued to lag behind and was no where near the general index. Fuel and light index rose steadily but was much below the general index level. In clothing group index there was a sharp rise during 1967 as compared to 1966.

29. Although the prices of food articles decreased by 6 points during 1969, the general index remained stationary at 1968 level. There was an up-swing in the prices of all commodity groups except food during 1969. *Pan, supari*, tobacco and intoxicants group index jumped up by 17 points and was much above the level of the general index. It even crossed the food index level. Fuel and light, housing, clothing and miscellaneous group indices maintained their steady trends and were up by 6 to 9 points.

30. During the period of rising prices during 1971, *pan, supari*, tobacco and intoxicants group item prices led the way and were increasing at the rate of almost treble as compared to general index. For clothing group, it was double as compared to general index. Similarly the increase in the fuel and light and miscellaneous group indices was about one and a half times than that of general index. Food and housing indices lagged behind the increase in the general index.

31. During 1972, a good deal of variation was noticed among the commodity groups. While the food group prices rose rather sharply, the increase in the prices of other groups was comparatively lower than in the previous year. However, the pressure on *pan, supari*, etc., clothing and miscellaneous items was quite noticeable.

COMPARATIVE MOVEMENT OF HIMACHAL PRADESH CONSUMER PRICE INDEX

32. A comparative study of the Consumer Price Index Numbers for Himachal Pradesh with Yamunanagar (Haryana), Amritsar (Punjab), Srinagar (Jammu and Kashmir) and All-India Index is presented in Table 9 along with the percentage increase in the respective indices from year to year. While comparing these series it has to be borne in mind

that there cannot be any rigid month to month comparison among them because of structural differences (viz., different base periods, weighting diagrams, items, coverage, etc.). However, it would be worth examining how the Consumer Price Index Numbers in Himachal Pradesh had moved in comparison with the index numbers of various industrial centres belonging to the adjoining States and India as a whole. For comparing these series, the indices for Yamunanagar, Amritsar, Srinagar and All-India have been shifted to 1965 base by simple arithmetic method.

TABLE 9—CONSUMER PRICE INDEX NUMBERS FOR INDUSTRIAL WORKERS FOR HIMACHAL PRADESH, YAMUNANAGAR, SRINAGAR, AMRITSAR AND ALL-INDIA

Base: 1965=100

Year	Himachal Pradesh		Yamunanagar		Amritsar		Srinagar		All India	
	Index	Percentage increase over previous year	Index	Percentage increase over previous year	Index	Percentage increase over previous year	Index	Percentage increase over previous year	Index	Percentage Increase over previous year
1965	100	—	100	—	100	—	100	—	100	—
1966	111	+11	114	+14	111	+11	112	+12	111	+11
1967	136	+23	139	+22	130	+17	119	+6	126	+14
1968	138	+1	138	—1	138	+6	113	—5	130	+3
1969	138	—	142	+3	137	—1	116	+3	128	—2
1970	145	+5	144	+1	140	+2	127	+9	135	+5
1971	152	+5	149	+3	145	+4	131	+3	139	+3
1972*	161	+6	158	+6	155	+7	136	+4	147	+6

*Average based on 11 months indices from January, 1972 to November, 1972.

33. An interesting feature of the price trends in Himachal Pradesh was their close proximity with those of Amritsar and Yamunanagar and All-India though the magnitudes of variation over different years were not of the same order. In case of Srinagar, though the prices followed the trend of prices prevalent in the neighbouring States, the percentage rise in C.P.I. Numbers tended to lag behind. This was in view of the fact that prices of rice and wheat which command a sizeable weight in the Food Index of Srinagar Centre are statutorily controlled which kept the abnormal increase in the index due to rise in the price of food-grains as witnessed in the neighbouring States under check. Rise in the prices during 1966 and 1967 was not a feature peculiar to Himachal Pradesh but common to all States which was reflected in the rise of All-India Index. It may be observed that in 1966, Himachal Pradesh, Amritsar and All-India Index moved up by 11% each while for Yamunanagar and Srinagar, it went up by 14% and 12% respectively, as compared to the average level of 1965. During 1967, Himachal Pradesh Index recorded the highest percentage increase (23%) and Srinagar the lowest (6%). The abnormal increase in the indices of Himachal Pradesh, Yamunanagar, Amritsar and All-India were due to abnormal rise in the prices of foodgrains. The indices for

Himachal Pradesh, Amritsar and All-India moved up during 1968 while that of Yamunanagar went down by 1%. The downward trend in the prices noticed during 1968 and 1969 in the various parts of the country appeared to be a temporary phenomenon and the inflationary pressure on prices was precipitated during 1970. During 1971, the Himachal Pradesh series maintained its dominating position and the average index stood at 152 or a rise of 5% over its 1970 level as compared to 3 to 4 per cent increase at other centres. The upward trend in prices noticed during 1971 was maintained throughout 1972 and the average indices for 1972 stood at 6 to 7 per cent higher as compared to 1971 at these centres except at Srinagar where the increase was only of the order of 4 per cent. Thus over a period of 7 years from 1965, while the All-India Index has moved up by 47% and that of Yamunanagar and Amritsar by 58 and 55% respectively, and Srinagar only by 38%, the increase in Himachal Pradesh has been the highest viz., 61%.

34. It can, therefore, be concluded that the prices in Himachal Pradesh have risen at a faster rate as compared to the neighbouring States and All-India level.



STRATEGY FOR POWER DEVELOPMENT IN HIMACHAL PRADESH

—Dr. K. C. Thomas,
Chairman,

Himachal Pradesh State Electricity Board.

Many parts of the country have been experiencing power shortage for the last few years. The position has further deteriorated lately and it seems that we are caught in a situation of perennial power crisis. Since the beginning of the last year many States have imposed varying percentage of power cuts. This has resulted in loss of production and large scale unemployment.

2. The deficit is endemic in the northern region and it is expected that the deficit in this region is going to be around 400 M Kwh in 1973-74, the last year of the Fourth Plan. The Union Minister of Irrigation and Power in a recent statement in the Parliament had stated that the country would have to put up with a power shortage of 2 to 3 MKW by 1973-74. The power shortage is not a localised problem of one State or a region but is wide spread throughout the country.

3. A number of factors have been responsible for the present predicament and some of them can be stated as, delay in commissioning of power projects, low utilisation of the available capacity, lack of transmission facilities, inadequate financial outlay on power, labour problems and the most important is the unanticipated growth in the demand for power.

4. The solution to the power shortage problem in the country lies in embarking upon a bold programme of power development in the Fifth and subsequent plans.

5. The planning for power development requires considerable advanced action particularly in the context of the long gestation period required for installation of power plants. In order to avoid such catastrophic situation in future, it is necessary to draw up long range plan extending over a period of 10 to 15 years on a regional basis to begin with. What

should be the ideal mix of several sources of energy will vary from region to region. A judicious selection of projects is required to be made for each region by weighing the comparative advantages and disadvantages of the alternative sources of energy viz., Hydro, Thermal and Nuclear.

6. It is in this context of projected acute power shortage that the power potential of Himachal Pradesh estimated as over 8 MKW in its five river basins strikes a hopeful note. On the basis of present cost of equipment, material and civil construction it is estimated that the hydel potential of Himachal Pradesh can be exploited to deliver power at approximately 4 to 6 paise per Kwh.

7. Thermal power in this region is much costlier because of the remoteness of the region from the coal belt and apparently inescapable delays and bottlenecks in the transport of such large quantities of coal through an already overloaded railway system. Similar is the position of the nuclear power *vis-a-vis* hydel power in so far as the cost of generation is concerned. It is, therefore, considered opportune and expedient to assign top priority to the development of the cheap hydel potential in Himachal Pradesh.

8. The major and medium hydel schemes which have been investigated partly or fully, their power potential and costs are listed below:

Serial No.	Name of the Project				Installed capacity (MW)	Likely cost (Rs. in crores)
1.	Parbati Hydel Project	..	..	..	1,900	300
2.	Nathpa-Jhakri Project	..	..	..	1,000	130
3.	Bhaba Hydel Project	..	..	..	150	14
4.	Baspa Hydel Project	..	..	..	400	40
5.	Kol Dam Project	..	..	..	1,250	200
6.	Chamera Hydel Project	..	..	..	400	70
7.	Barla Dam	..	..	..	200	67.30
8.	Dadahu Dam Project	..	..	..	100	45
9.	Malana Hydel Scheme	..	..	..	75	12.50
10.	Bassi Augmentation	..	..	..	15	2
TOTAL					5,490	880.80

9. Brief descriptions of the individual projects are as under:—

(i) *Parbati Hydel Project*

This project envisages a storage dam about 550 feet high near the confluence of Dibi Bokri Nallah and Parbati River at an elevation of 12,000 feet, a series of tunnels 35 miles long and balancing reservoirs to incorporate the waters of Hurla and Sainj Nallahs to generate

power in a cascade of three power houses utilising a total drop of about 9,000 feet. This project with a total installed capacity of 1,900 MW, is estimated to cost Rs. 300 crores.

(ii) *Nathpa-Jhakri Project*

The scheme envisages the construction of a pick-up dam on river Sutlej at Nathpa about 3 miles downstream of Wangtoo; and 18 miles long tunnel and a power house at Jhakri with an installed capacity of 1,000 MW. The scheme is estimated to cost Rs. 130 crores.

(iii) *Bhaba Hydel Project*

The Project envisages the construction of a diversion structure at Huri village to divert the waters of Bhaba through a 3.5 miles long tunnel to a power house with an installed capacity of 150 MW located on the right bank of Sutlej and utilising a fall of about 3,000 feet. The project is estimated to cost Rs. 14 crores.

(iv) *Baspa Hydel Project*

The project envisages the construction of a diversion structure at Rakcham to divert the water of Baspa through a 12.4 miles long tunnel to a power house with an installed capacity of 400 MW located near Karcham, utilising a fall of about 4,350 feet. The project is estimated to cost Rs. 40 crores.

(v) *Kol Dam Project*

The project envisages construction of a rock-fill dam across the Sutlej near Kian about 45 miles upstream of Bhakra Dam. The power House to be located just downstream of the dam will have an installed capacity of 1,250 MW. Besides generating power, the Kol Dam will serve as a check dam and reduce the rate of silting in the Bhakra reservoir thereby increasing its life. The project is estimated to cost about Rs. 200 crores.

(vi) *Chamera Hydel Project*

This scheme envisages a barrage across river Ravi near village Chamera to divert 1.6 Maft of Ravi water into Beas basin through a 13.7 miles long tunnel to a power house with an installed capacity of 400 MW and utilising a head of 1,370 feet. The Project is estimated to cost Rs. 70 crores.

(vii) *Barla Dam Project*

Barla Dam Project envisages the construction of a 430 feet high rock-fill dam across river Ravi, near Barla, with a dead storage capacity of 0.25 Maft and live storage capacity of 1.00 Maft. A power house with 4 units of 50 MW each is proposed on the left bank. The Project is estimated to cost Rs. 67.30 crores.

(viii) *Dadahu Dam Project*

This project envisages construction of a storage dam about 3 miles upstream of Jateon barrage of Stage I development on the River Giri. The power House located at the toe of

the dam will have an installed capacity of 100 MW and provide regulated releases of water in the Giri Power House and augment the dry weather flow of river Yamuna. The Delhi Administration and Haryana Government have been showing interest in the construction of this Project and to share the cost of the Project. The Project is currently estimated to cost Rs. 45 crores.

(ix) Malana Hydel Scheme

This Project located on the Malana Khad (a tributary of the Parbati) envisages construction of a barrage and a 2 mile long tunnel to utilise a maximum discharge of 800 cusecs through a gross drop of about 1,700 feet to generate 75 MW of power at an anticipated capital cost of Rs. 12.50 crores.

(x) Bassi Augmentation (Additional 15 MW)

The existing power house at Bassi, has 3 units of 15 MW each with provision for housing the 4th unit. At present, one pen stock capable of feeding only two units is trifurcated and is connected to three units, out of which one is stand by. The power conductor system from Shanan to Chaprot Reservoir has already been constructed to carry the dependable discharge required for all the four units. The augmentation estimated to cost Rs. 2 crores will involve laying of an additional penstock and part civil works, and the erection and commissioning of the fourth unit of 15 MW capacity.

10. As would be seen from the above the assessed cost of these schemes is about Rs. 900 crores with possible escalation in cost, if these can not be taken up immediately. However, with the present method of determining State Plan allocations on the basis of past expenditure and allowing only a small percentage increase on the outlay in previous years or previous plan cannot possibly accommodate these hydel projects. The approved Fourth Plan allocation of Himachal Pradesh is about Rs. 115 crores out of which the power sector including transmission and distribution has been assigned about Rs. 23 crores only. Even if the Fifth Plan allocation to the power sector of Himachal Pradesh is doubled, as is now being contemplated, the amount available for generation projects in five years of the Fifth Plan will not be more than Rs. 30 to 35 crores. One cannot visualise starting any of the major projects with this level of allocations. Since the power shortage is felt in the entire Northern region and development of the hydel potential of Himachal Pradesh is in the interest of the region as a whole, it seems appropriate to approach Government of India to allocate adequate funds for power generation by disregarding the present norms of State Plan allocations or by earmarking a special fund for Hydel generation, from which additional allocation can be made to Himachal Pradesh for Hydel development over and above the normal state plan allotments.

11. In this context the immediate need of the hour is to identify the most feasible hydel projects in Himachal Pradesh in order of their over-all superiority and launch them for execution so that the benefits start flowing partly by the end of the Fifth Five Year Plan. This can be

possible only if higher outlays than currently estimated are kept apart for power generation. A suitable mix of small medium and large projects will also be necessary to ensure continuous power availability in future. It is only by wiping out the power deficit in the Northern region and for that matter in the country as a whole that the wheels of industry can be kept rolling and economic growth rate sustained.

AGRICULTURAL PLANNING FOR PROSPERITY IN HIMACHAL PRADESH



—Dr. B. S. Jogi,
*Director, Agriculture Department,
Himachal Pradesh.*

Agriculture has come to play a very important role in the socio-economic development of Himachal Pradesh. About 93 per cent of the total population in the State depends directly or indirectly upon agriculture for its livelihood. The percentage of workers engaged in agriculture in this State is as high as 76. Therefore, for the well-being of the common people and bringing prosperity in the State, proper agricultural planning and rapid development are very essential and have to be taken up on priority basis. Agriculture is the backbone of the State. Therefore, without its proper development, the people and the State cannot be expected to prosper.

DIFFICULT TERRAIN

2. The agricultural planning and development work in this State is quite different than that in most parts of the country. The field conditions are very difficult and agro-climatic conditions differ not only from region to region but even from field to field. Farming in this State starts from the valleys of Shiwalik hills with an elevation of 300 metres above sea level and extends to not only alpine zone, with high rainfall, but also to arid zone of high altitude above 3,000 metres from sea level bordering Tibet. Out of the total area of 6,10,000 hectares, only 93,000 hectares are under irrigation and thus, the percentage of irrigated area to total area is only 10 per cent. The population is also fast increasing at the rate of 2.3 per cent and it is estimated that by the end of the Fifth Five Year Plan i.e., 1978-79, it would be about 41.48 lakhs. Thus, the pressure on land is constantly increasing and most of the additional population has also to depend upon it.

3. The agro-climatic conditions in this State, being quite divergent than in the plain regions of the country, require conspicuously different agronomic practices, cropping

pattern, times of sowing, harvesting, marketing, etc. Almost all the available culturable land has been brought under the plough and there is practically no scope for further extension of land for cultivation. All these factors compel to evolve a suitable cropping pattern, agricultural practices and adoption of intensive cultivation measures for increasing the production.

FROM SCARCITY TO PROSPERITY

4. The beginning of agricultural planning and development work on systematic lines in this State dates back to the year 1950. Prior to that, the agricultural development work was tagged with the Forest Department. It was then a general feeling that the agricultural development in this hilly terrain had very little scope and for the economic uplift of the Pradesh some other measures were needed.

5. But starting from scratch in 1950, the systematic agricultural planning and development in this State during the past 25 years not only changed the concept but brought about a tremendous change in the economic uplift of the people. The Pradesh now stands distinct on the map of India as the largest supplier of quality seed potato in the country, second biggest producer of high quality ginger, pioneer in the production of edible mushrooms, foremost producer and supplier of top quality off-season vegetables and seeds of temperate type of vegetables. The State is also pioneer in the production of seeds of white sugar-beet and chicory.

6. The past 25 years have seen a big revolution in agricultural development as a result of proper planning during the First Five Year Plan. Main emphasis was given on production of cereals and seed potato. During the Second and Third Plan, besides vegetable development, main emphasis was given on development of horticulture and other cash crops. During the Fourth Five Year Plan, main attention is being given, *inter-alia* to soil conservation, food production and development of more cash crops.

PRODUCTION OF FOODGRAINS

7. Foodgrains are the basic need of the people and the State has to be self-sufficient for its requirement. At present the State is deficit by about sixty thousand tonnes. The valleys and foot-hills of the State are very suitable for the production of foodgrains and they can meet the requirement of foodgrains of the entire State provided they are properly utilized. Out of the total cultivated area of 6.40 lakh hectares, major portion is under food crops and that lies in the valleys and foot-hills. The State Department of Agriculture last year organised special *rabi* campaigns to increase the production in the State to cover 3,50,000 hectares under wheat. This included an area of about 1,75,000 hectares to be covered under high yielding varieties. As a result of special campaign, the targets fixed have almost been achieved. It is expected that the foodgrains production during the year 1972-73, will be about 1,125 thousand tonnes, as against 945 thousand tonnes during 1971-72. The highlights of the agricultural production programme included the following steps:—

HIGH YIELDING VARIETIES PROGRAMME

8. The high yielding varieties of cereal crops such as wheat, maize and paddy have been introduced in the Pradesh. An area of about 1,75,000 hectares has been brought under high yielding varieties of wheat namely Kalyan Sona, Sonalika and R.R.-21 as against 1,25,000 hectares under these varieties during the year 1971-72. Thus, the Fourth Five Year Plan target of 77,000 hectares under high yielding varieties of wheat has not only been achieved but an additional coverage of 127 per cent has been done. During *kharif* 1972, an area of 50,000 hectares was covered under hybrid and composite varieties of maize and a similar area under high yielding varieties of paddy. Encouraged with these achievements the targets for *rabi* 1974 have been fixed at 2 lakh hectares to be brought under high yielding varieties of wheat, 60,000 hectares under maize and 55,000 hectares under paddy, during *kharif* 1973.

FERTILIZERS

9. Besides high yielding varieties, fertilizers also play a vital role in increasing agricultural production. As a result of the extensive efforts of the State Department of Agriculture, farmers have taken up increased use of fertilizers. During the year 1972-73, the distribution of fertilizers is estimated at 6,100 tonnes nitrogen (N), 2,900 tonnes phosphate (P_2O), and 1,200 tonnes potash (K_2O). These figures are comparatively much more than the previous year. The target fixed for distribution of fertilizers in the year 1973-74 includes 8,900 tonnes nitrogen (N), 4,400 tonnes phosphate (P_2O_5) and 2,500 tonnes potash (K_2O). The State Government is meeting the entire cost of internal transport of the fertilizers and thus they are being supplied to the farmers on uniform rates throughout the State.

PLANT PROTECTION MEASURES

10. In order to minimise the loss to the crops from insects, pests and diseases, effective plant protection measures have been adopted. The following are the achievements expected during the year 1972-73:—

<i>Name of crop</i>	<i>Area treated</i>
(a) Food crops ..	84,700 hectares
(b) Commercial crops ..	10,000 hectares
(c) Seeds ..	700 tonnes
(d) Food grains ..	13,500 tonnes

The targets fixed for the year 1973-74 include a coverage of 1,80,000 hectares under food crops and 40,000 hectares under commercial crops. Besides this, 8,000 tonnes of seeds and 10,000 tonnes of foodgrains are also to be treated under plant protection measures.

PRODUCTION OF CASH CROPS

11. As mentioned earlier, the agro-climatic conditions of Himachal Pradesh are ideal for the production of several cash crops. The production of cash crops brings more income per hectare to the farmers and, therefore, efforts have been made to increase the production of the following crops:—

SEED POTATO

12. Himachal Pradesh produces high quality disease-free seed potato and this State is the largest supplier of seed potato in the country. The farmers of this State get Rs. 3 to 4 crores per annum from this crop. Because of favourable weather during this year, the estimated production of seed potato was 95,000 tonnes, as against 49,526 tonnes during the previous year i.e., *kharif* 1971.

GINGER

13. Himachal produces high quality ginger and this State is the second largest producer of this crop in the country. So far its cultivation had been limited to Sirmur, and Solan districts only but now it is being extended to Mandi and Kangra districts also. Efforts are also being made to step up its production and expand its market. About 800 tonnes of dry ginger was exported out of this State during the last year.

VEGETABLES

14. The State produces vegetables, especially temperate type of vegetables, when they are not grown in the plains. These so called off-season vegetables, namely tomato, peas, cauliflower, beans, etc. find ready market all over the country and bring attractive price to the growers. Special efforts are being made to increase their production and find out new markets.

VEGETABLE SEEDS

15. Seeds of temperate type of vegetables are produced in Himachal Pradesh particularly in Solan, Simla, Kulu, Mandi, and Kangra districts. There is an increasing demand for the seeds of temperate vegetables from all parts of the country and the production of vegetable seeds, particularly that of the snowball cauliflower, brings very high income to the farmers. The National Seeds Corporation has taken up special programme for the production of certified seed of these vegetables on cultivators fields.

MUSHROOMS

16. The State has given a boost to the production of mushrooms and it leads the country in this aspect. The production of mushrooms has been taken up by many farmers and the State Department of Agriculture, along with Himachal Pradesh University, have been encouraging the farmers to take up its cultivation on commercial scale.

SEED OF SUGARBEET

17. Kinnaur district of Himachal Pradesh has taken a lead in the production of quality seed of white sugarbeet for the production of sugar in the country. Now, seed of sugarbeet is being produced on cultivators' fields in Kinnaur district in co-ordination with the National Seeds Corporation. This new introduction has helped the farmers of the Kinnaur district to get additional income and improve their economy.

NEW CROPS

18. The State Department of Agriculture is also examining the possibilities of introduction of some new crops namely cardamom, hops, sunflower and soyabean in suitable areas of this State. It is hoped that these crops will help in developing agro-industrial complex in the State and also help the farmers to improve their economy.

INTENSIVE AGRICULTURAL DEVELOPMENT PROJECTS PROGRAMME

19. A number of following intensive agricultural development programmes and projects have been launched in the State to give a boost to the agricultural production and thereby improve the economy of the farmers.

MULTIPLE CROPPING

20. This programme aims at taking more crops per annum from the same land. This programme is centrally sponsored. Under this new programme emphasis is being laid to increase the intensity of cropping through better crop rotation, inter-cropping, relay-cropping, mixed-cropping, etc. With the introduction of high yielding varieties it has now become possible to adjust the duration of crops and take additional intermediate crops. In Himachal Pradesh, there is little possibility of extending area under crops. Therefore, this programme is of high significance and it is being given full attention. The following are some of the 3 or 4 crop rotations which are being recommended to the cultivators:—

- (i) Maize-Toria-Wheat-Moong;
- (ii) Maize-Toria-Potato;
- (iii) Maize-Potato-Potato; and
- (iv) Maize-Potato-Wheat.

In multiple cropping, there is another advantage that besides full utilization of the land, farm labour is also fully utilized. Thus, this new programme is going to help the State not only in increasing agricultural production in the available land but it will also help in providing employment to the people. It is proposed to cover an area of 16,000 hectares under this programme during the year 1973-74.

SMALL FARMERS DEVELOPMENT AGENCY (SFDA), SIRMUR DISTRICT

21. This scheme has been taken up in Sirmur district. Under the scheme, adequate credit facilities to the farmers, having holdings up to 7.5 acres, are being given for the purchase of agricultural inputs, development of irrigation resources and adopting subsidiary occupations such as horticulture, dairy, sheep-breeding, poultry, bee-keeping, mushroom cultivation, etc. Provision of custom service for hiring agricultural machineries, plant protection equipments and execution of irrigation schemes has also been envisaged under this programme. The financial assistance is being given to the tune of 75 per cent loan and 25 per cent subsidy. The loan is being advanced through commercial banks and primary co-operative societies.

MARGINAL FARMERS AND AGRICULTURAL LABOURERS AGENCY (MFAL), SOLAN

22. This scheme has been put into operation in three development blocks, namely, Kandaghat, Dharampur and Nalagarh of Solan district with a view to rejuvenate overall economy of the farmers having holdings of less than 2.5 acres. Under this scheme, main emphasis has been laid on the development of crops, vegetables and fruits and development of subsidiary occupations such as animal husbandry, mushroom cultivation, poultry, etc. Under this scheme, a provision of custom service for hiring agricultural machinery, plant protection equipment and execution of irrigation schemes has also been envisaged. Farmers are being given financial assistance to the extent of 33 per cent subsidy and 67 per cent loan of the total investment through commercial banks for undertaking individual and composite development programmes.

AREA DEVELOPMENT PROGRAMME FOR BACKWARD AREAS

23. The backward areas such as Pangi, Bharmaur, Bara Bhangal, Chhota Bhangal, Dodra Kavar, Pandara Bees, Athara Bees, Kashapat, Manali-Ujhi and Transgiri tracts are being taken up for their economic development. Special integrated development programme is being chalked out for the development of these areas during Fifth Five Year Plan. The possibilities of agricultural development and utilization of natural resources in these areas are being also examined.

INDO-GERMAN AGRICULTURAL PROJECTS

24. In order to achieve a break through in agricultural production in the Pradesh, Intensive Agricultural Development Programme (IADP) was launched in Mandi district in November, 1962 in collaboration with the Federal Republic of Germany. Since its inception, the Indo-German Agricultural Project has made a great headway in introducing mixed farming besides boosting up the agricultural and horticultural production. Encouraged by the result of the work done in Mandi district, similar project was started in erstwhile Kangra district

in 1967 and by now it has made progress in increasing agricultural production, besides horticultural and animal husbandry programmes. These projects have opened new avenues for the farmers of the State and they are now utilizing all available opportunities and modern techniques to enrich their agrarian economy. On account of the spectacular results achieved under these projects the term of operation is likely to continue up to 31st December, 1974. Mandi Project has become like a field laboratory and training station for extension functionaries from other districts and thus techniques and practices evolved in the project are being adopted in other districts of the State. The Government of West Germany is now considering the question of assigning a couple of additional experts for preparing the perspective plans for the development of Mandi district during the next 15—20 years covering all sectors of the economy.

SOIL CONSERVATION

25. The major portion of the Pradesh is hilly terrain and is subject to erosion due to steep slopes and heavy rains. The slopy terraces of agricultural fields are, therefore, subject to constant erosions which washaway the soil fertility and reduce the yields of the crops. The Government is fully seized of this situation and have formulated a comprehensive programme to treat the agricultural lands by providing technical know-how and financial assistance to the farmers through the Soil Conservation Wing of the Department of Agriculture. Financial assistance in the shape of 50 per cent loan and 50 per cent subsidy is provided. In order to enable the small farmers to derive benefit from this financial assistance, the Government has limited this loan subsidy facility to the farmers whose annual income is Rs. 6,000 or less. During the year 1972-73, it is anticipated to treat 2,100 hectares of agricultural land under soil conservation measures.

AGRICULTURAL MARKETING

26. For the development of proper agricultural marketing facilities in respect of important agricultural commodities, a State Marketing Board has been constituted. A number of regulated markets are being established all over the State. The development work of Kandrori Market in Kangra district is in progress.

AGRICULTURAL IMPLEMENTS

27. There is a Research-cum-Demonstration and Training Centre at Bhangrotu which evolves simple, low cost and easy handling implements reducing the cost of cultivation and human drudgery. Most suitable implements for different local conditions in the Pradesh are tested and modified at this centre. It also introduces and popularises the improved implements among the farmers. Automatic potato planter, proto-type hand press for extraction of sugarbeet juice, power apple grader and hand operated cob remover have been developed at this centre apart from other fabrication works. Besides these programmes, a

number of facilities for farmers such as supply of free agricultural publications, farm advisory service etc., are also being given. There is now awakening among the farmers and they have started adopting scientific farming.

FUTURE PRODUCTION PLAN

28. The main task in agricultural planning for development is to make the state not only self sufficient but also capable of meeting emergency demand through reserves of foodgrains. For this, the valley areas and sub-mountainous regions of the State are being fully explored through intensive cultivation measures. It is estimated that 148.67 thousand hectares area lies in the valleys. This when fully utilized, can meet the entire requirement of the foodgrains of the State. Besides this, all other areas of the State having potentiality for the production of the cash crops like seed potato, ginger, seeds of temperate vegetables, seeds of sugarbeet and chicory and production of hops are also being tapped.

29. The tribal and backward areas which could not find due attention during the previous plans have also to be given full attention for their development so that uniform pace of development is maintained throughout the State. A number of crops such as sunflower, soyabean which are of industrial importance are also now to be cultivated on large scale so that an agro-industrial complex may be developed in the State.

CHARACTERISTICS OF LABOUR IN HIMACHAL PRADESH

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Himachal Pradesh came into being on April 15, 1948 with the merger of 30 and odd erstwhile princely hill States. In 1954, Bilaspur, another Part C State, was merged with Himachal Pradesh. On 1st November, 1966, the Pradesh was further enlarged with the merger of the hill districts of the erstwhile State of Punjab. Himachal Pradesh became a full-fledged State on 25th January, 1971 and now the State comprises of 12 districts with a total area of 55,673 square kilometres and a population of 34.60 lakhs (according to 1971 census). Density of population in the State is 62 per square kilometre and varies from 2 per square kilometre in Lahaul and Spiti district to 167 per square kilometre in Bilaspur district. Decennial growth rate of population in Himachal Pradesh was 23.4 per cent during the period 1961—1971 as compared to 17.87 per cent during the period 1951—1961. Percentage of literates to total population was 31.32 in 1971 as compared to 21.27 in 1961. The corresponding figure at the all-India level was 29.3 during 1971. Merger of new hill areas has not changed the fundamental character of Himachal Pradesh which even now remains basically a rural-based hill economy with few industrial units of significance. Agriculture still remains the mainstay of the people and 76 per cent of the population depends directly or indirectly on agriculture. It will, therefore, be nearer to the truth to treat agriculture in Himachal Pradesh as an industry itself. Horticulture provides a subsidiary means of livelihood to the people especially in the field of apple growing which has made rapid strides in the State and it is encouraging to note that more and more people are taking to horticulture in a serious manner.

2. Even though the past several years have witnessed a gradual increase of some industries in the Pradesh, their impact has not been significant. As against the all-India figure of 17 per cent as share of mining and manufacturing industries (including small industries) in the country's national income, Himachal Pradesh derives only 8.3 per cent from this sector according to 'quick' estimates for 1969-70. Even agriculture, which contributes a

ion's share towards the net domestic product of the State, is not developed on proper lines as will be revealed by the fact that per capita income in Himachal Pradesh was Rs. 322.00 during 1969-70 as compared to Rs. 339.00 for all-India at 1960-61 prices. Of course, the Pradesh has certain limitations to the development of organised industries on account of its own special problems. There were 167 registered factories in the Pradesh having an average daily employment of 11,214 workers during the year, 1970.

3. The intensity and extent of labour problem is dependent on the industrial activity which is responsible for generating employment. At the end of December, 1971, about 2.02 lakh persons were employed in the public and private sectors in Himachal Pradesh. A comparative picture of the *employees is given below:—

TABLE 1—EMPLOYMENT IN PUBLIC AND PRIVATE SECTOR—1968 TO 1971

Employees					December, 1968	December, 1969	December, 1970	December, 1971
1					2	3	4	5
<i>A. Public Sector</i>					1.53	1.54	1.68	1.89
(i) State Government					1.18	1.15	1.27	1.37
(ii) Central Government					0.27	0.31	0.33	0.37
(iii) Semi Government					0.03	0.04	0.04	0.11
(iv) Local Bodies					0.05	0.04	0.04	0.04
<i>B. Private Sector</i>					0.12	0.13	0.13	0.13
TOTAL (A+B)					1.65	1.67	1.81	2.02

*Employment Market Information Reports.

Out of total employment, the public sector accounted for 93 per cent in 1971. The low rate of industrial development is reflected by the total employment in the private sector. Even in public sector there are no large industrial establishments and bulk of the employment is accounted for by the Government, semi-Government and local bodies. Though Himachal Pradesh is endowed with vast natural resources, cheap power and labour, etc., industrialisation poses one of the most difficult problems in the Pradesh mainly due to the rugged terrain, high altitude, distance from the centres supplying raw material and transport difficulty, etc.

4. Hill people by nature are peace-loving and lesser number of industrial disputes over the years will bear testimony to this fact. But, this does not necessarily mean that the labour problems are non-existent in Himachal Pradesh. No economic surveys/inquiries have so far been conducted in the Pradesh with a view to study the magnitude of labour problems and there is a general paucity of statistical data and inadequacy of evidence on this aspect. This article, therefore, does not claim to cover any new ground on the subject and is not designed

to serve as a critical appraisal of the labour problems. Endeavours have, however, been made here to put together the available data for the use of the administrators and to serve as a benchmark for future research.

AGRICULTURAL WORKERS

5. These workers constitute an overwhelmingly major section of rural workers. Workers in the agriculture sector, according to 1971 census, are distributed into two main categories; (i) cultivators and (ii) agricultural labour. The agricultural workers are basically unskilled and unorganised and have little for their livelihood other than personal labour. It consists of two categories; (i) landless agricultural labour and (ii) very small cultivators whose main source of earnings due to their small and sub-marginal holdings is wage employment. Landless labour can be classified into two broad categories; (a) permanent labour attached to a cultivating household and (b) casual labour. The second group can again be divided into three sub-groups, viz., cultivators, share-croppers and lease holders.

6. According to 1971 census, nearly 9.57 lakh workers, i.e., 75 per cent of a total of 12.61 lakh workers were engaged in agriculture. This percentage, as is apparent from Table 2, has not changed significantly during the last 20 years:—

TABLE 2—TOTAL POPULATION, TOTAL NUMBER OF WORKERS AND AGRICULTURAL WORKERS IN HIMACHAL PRADESH FOR THE CENSUS YEARS 1951, 1961 AND 1971

						(In lakhs)		
Item						1951 (Old H.P.)	1961	1971
1						2	3	4
Total population						11.09	28.12	34.24
Total No. of workers						6.53	15.16	12.61
<i>Agricultural workers:</i>								
(i) Agricultural labourers						0.16	0.21	0.54
(ii) Cultivators						5.72	12.23	2.03
TOTAL						5.88	12.44	9.57
Percentage of agricultural workers to total no. of workers						90.0	82.1	75.9
<i>Agricultural labourers as percentage of:</i>								
(i) Total workers						2.5	1.4	4.3
(ii) Agricultural workers						2.7	1.7	5.6

Source:—Directorate of Census Operations, Himachal Pradesh.

7. It may be mentioned that in view of the differences in geographical coverage, as indicated above, serial data are not strictly comparable. However, some broad conclusions can still be drawn since the areas whose figures are not included in the statistics for the year prior to 1961 could have only a very marginal effect. It will be seen that from 1951 to 1961, there was a gradual decline in the percentage of agricultural workers to the total population, but in 1971 a substantial drop is noticed in the percentage of agricultural workers to the total population. The reasons for this decline have been discussed elsewhere.

8. Distribution of working population by agricultural and other workers is given in the following table and is intended to throw some light on the economic aspect of the population *vis-a-vis* the main activity of the individuals:—

TABLE 3—PERCENTAGE OF AGRICULTURAL AND OTHER WORKERS TO TOTAL WORKERS

District	Agricultural Workers				Workers other than cultivators or agricultural labourers		
	Cultivators		Agricultural labourers		1961	1971	
	1961	1971	1961	1971			
1	2	3	4	5	6	7	
Chamba	..	83.96	80.65	0.36	1.88	15.68	17.47
Kangra	..	79.91	66.66	1.58	7.07	18.51	26.27
Mandi	..	87.57	73.43	0.94	1.88	11.49	24.69
Kulu	..	86.67	81.28	1.13	2.90	12.20	15.82
Lahaul and Spiti	..	64.66	57.60	3.28	1.83	32.66	40.57
Bilaspur	..	80.02	78.97	1.01	3.12	18.97	17.91
Mahasu	..	82.25	76.73	2.17	3.77	15.58	19.50
Simla	..	62.16	50.82	0.66	2.99	37.18	46.19
Sirmur	..	79.33	71.52	1.71	5.62	18.96	22.86
Kinnaur	..	66.46	62.97	3.57	5.75	29.97	31.28
Himachal Pradesh	..	80.68	71.60	1.41	4.25	17.91	24.15

Source :—Directorate of Census Operations, Himachal Pradesh.

9. A substantial drop in the number of agricultural workers cannot be attributed to a sudden shift from agriculture as the decline could mainly be due to the following reasons:—

- (a) In 1971 census a worker has been defined as “a person whose main activity is participation in any economically productive work by his physical or mental activity—work involves not only actual work but effective supervision and direction of work”. The reference period was one week prior to the date of enumeration in case of regular work and the last one year for activities which are seasonal. Since the enumeration period coincided with a slack agricultural season, most of the agricultural workers might have been enumerated as having non-agricultural activity.

- (b) There is a difference in the manner and sequence of eliciting information for the economic activity from the respondents, between the censuses of 1961 and 1971. In the 1961 census Individual Slip Schedule, there were four pointed economic questions to be answered by the respondents. Besides, there was a separate question for non-workers. In 1971 census Individual Slip carried two economic questions in regard to (i) main activity and (ii) subsidiary work. Thus, it is highly probable that certain groups of females, who participated in the agricultural activity in this Pradesh, returned themselves as workers (cultivators) when they were confronted with specific questions in 1961 census but ignored to return likewise in 1971 because they were not specifically asked about being engaged in agriculture.
- (c) Then, there is the difference between the concept of 'worker' as applied in the two censuses, which appears to have affected the statistics to some extent. The 1961 census concept of 'worker' involved, besides other details, "the basis of work will be satisfied in the case of seasonal work like cultivation, livestock, dairying, household industry, etc., if the person had some regular work of more than one hour a day throughout the greater part of the working season". As against this in 1971 census the concept of a 'worker' was: "A worker is a person whose main activity is participation in any economically productive work by his physical or mental activity".

10. From table 3, however, one conclusion can be drawn. The percentage of cultivators had dropped from 80.68 in 1961 to 71.60 in 1971 whereas that of the agricultural labourers increased from 1.41 in 1961 to 4.25 in 1971 census. In Kangra and Sirmur districts the increase in the percentage of Agricultural Labourers from 1.58 and 1.74 in 1961 to 7.07 and 5.62, respectively in 1971, is perhaps a pointer to the seriousness of the nature of the problem of landless agricultural workers. Generally speaking, this increase in the percentage of agricultural labourers may be considered as an index of deterioration of the size of agricultural land holdings and of the economy of the agricultural classes as a whole. Per capita average size of the land holdings in Himachal Pradesh was 0.10 hectares in 1961 and 0.18 hectares in 1971. (The increase in the size of holdings may be due to enlargement of area of Himachal Pradesh by the merger of certain districts of erstwhile Punjab State in 1966). Another factor for the increase in the number of agricultural labourers to some extent may be attributed to the change in family pattern, i.e., from joint family to individual family pattern. There has been a corresponding rise in the percentage of workers other than cultivators and agricultural labourers. The increase in the percentage of cultivators is noticed in all the districts. Simla district forms a class by itself in as much as 46.19 per cent of the workers in this district belong to categories of workers other than cultivators and agricultural labourers. The shift from cultivation to other employments is also not ruled out completely, especially when a large number of projects and construction works have been under taken in the State.

11. Two important factors have contributed to this change in the structure of the rural and working force; (i) cultivators, particularly small cultivators have grown in number in the

decade 1961—71 because of sub-division of existing holdings through laws of inheritance leading to replacement of hired labour by family labour, (ii) the land reforms have sought to confer occupancy rights on a large number of small cultivators and landless labourers.

12. A recognised feature of rural employment is its seasonality. This problem was also studied in the course of an Evaluation Survey conducted in Bharmour tehsil of Chamba district in 1964-65. The Bharmour tehsil is one of the most economically backward areas of Himachal Pradesh and is snow-bound for about 5 to 6 months in a year. Intensity of employment varies according to seasons and the relevant data pertaining to the number of additional hours per day during a month for which a male and female worker was generally available is given below:—

TABLE 4—NO. OF ADDITIONAL HOURS PER DAY AVAILABLE FOR WORK EACH MONTH

Month (1964-65)	No. of additional hours per day available for work each month	
	Male worker	Female worker
1	2	3
June	0.50	0.64
July	1.75	2.12
August	1.91	2.43
September	1.33	2.48
October	2.39	2.54
November	3.24	2.60
December	2.48	3.52
January	2.78	2.98
February	2.35	2.49
March	2.11	2.19
April	1.57	1.71
May	1.75	1.31

The above table brings home the fact that during winter months the underemployment is more among agricultural workers.

13. Agriculture is included as one of the employments in the schedule appended to the Minimum Wages Act, 1948. Minimum rates of wages have also been fixed but in view of the lack of evidence, it is rather difficult to say if the Act has made any perceivable impact on agricultural workers.

14. *Minimum rates of wages as applicable in agriculture are as follows:—

Unskilled employees

Adult male	..	Rs. 3.00 per day
Adult Female/Adolescent	..	Rs. 2.70 per day

*Fixed under the Industries Department Notification No. 2-27/69-SI(MW), dated 1-9-1969.

†Report of the National Commission on Labour, p. 212.

PLANTATION LABOUR

15. There are small tea plantations in Kangra and Mandi districts (16 in number covered under the Plantations Labour Act, 1951 and having an area of 2,756 acres). These plantations have only marginally relieved the pressure on land and provided a subsidiary means of livelihood to the agricultural labour households. The tea shrubs in these plantations are very old and in many cases have become uneconomic. As a result, the number of plantation workers registered a steep decline from 951 in 1951 to 204 in 1961.

16. The rates of wages for workers employed in tea estates on various occupations have been prescribed by the Central Wages Board. The wages of plantation labour in Himachal Pradesh are the lowest in the country. The wages† in the north zone are given below for comparison:—

State	Basic wage effective from 1-1-1966 (in Rs.)		
	Men	Women	Children
1	2	3	4
<i>North India</i>			
1. Bihar (Ranchi)	1.55	1.55	—
2. Himachal Pradesh (Kangra and Mandi)	1.20	0.94	0.55
2. Uttar Pradesh (Dehradun)	1.60	1.60	—

17. Besides, a dearness allowance of Re. 0.75 per day per point of increase (above 170 points) in the average All India Consumer Price Index Numbers subject to a maximum of 16 points in any one calendar year is paid to the workers.

18. The Plantations Labour Act, 1951 provides for the welfare of labour and regulation of the condition of work in plantations. Its main provisions deal with (i) health and welfare, (ii) hours of work, rest intervals, etc. (iii) employment of children and young persons and, (iv) leave with wages. The tea estates being very small and the labour being un-organised probably much heed is not being paid to the provisions of this Act.

INDUSTRIAL LABOUR

19. Industrially Himachal Pradesh is a backward State. According to 1961 Census, out of a working population of 15,15,880 only 13,937 persons (0.50 per cent.) were employed in manufacturing industries. Further, 83,090 persons or 2.95 per cent of the population was

engaged in household industries. Thus, industries accounted for the employment of only 3.45 per cent of the population. There are no statistics available on the working conditions in the un-organised sector of household industries. However, the statistics relating to employment in the registered factories are collected on a regular basis and are discussed below:—

20. *Employment*.—Information relating to average daily employment in registered factories is collected by the State Bureau of Economics and Statistics on a half yearly and annual basis under the statutory provisions of the Factories Act, 1948. The statistics are consolidated and furnished to the Labour Bureau, Government of India. The figures of average daily employment during a year reported by each factory is derived by dividing the total attendances during the year by the total number of days worked in the factory. The average daily employment in registered factories in Himachal Pradesh is given in Table 5.

21. The figures relate to 'workers', as defined in the Factories Act, i.e., "a person employed, directly or through any agency, whether for wages or not, in any manufacturing process or in cleaning any part of the machinery or premises used for a manufacturing process, or in any other kind of work incidental to or connected with the manufacturing process".

22. Most of the industrial workers are migrants to industrial areas due to pressure on land but they continue to keep in touch with their place of origin. The bulk of the immigrant industrial workers in Himachal Pradesh, however, have some stake in agriculture and as such they visit their home during agricultural working seasons. There is, therefore, a greater degree of absenteeism in this Pradesh as compared to other parts of the country. There are, however, no available statistics on absenteeism in Industries in this Pradesh.

TABLE 5—AVERAGE DAILY NUMBER OF WORKERS EMPLOYED IN REGISTERED FACTORIES—
1961—1970

Industry	Average Daily Number of workers employed during					
	1961	1966	1967	1968	1969	1970 (P)
1	2	3	4	5	6	7
Sugar	35	—	—	—	—	—
Distilleries and Breweries	718	711	741	703	790	732
Woollen Textiles	31	7	50	165	96	264
Machinery	522	470	1,409	1,408	1,673	2,034
Turpentine and Rosin	109	101	102	103	198	241
Tea (Plantation and Factory)	58	188	252	164	151	155
Transport Work Shop	317	1,046	1,670	2,102	3,026	3,166
Gun Manufactures	74	83	84	115	85	90
Ayurvedic and Pharmacy	23	28	20	56	56	53
Brick Kilns	150	—	—	—	—	—

1	2	3	4	5	6	7
Metal Products ..	38	36	211	264	471	653
Photographic and other optical goods	26	54	35	35	35	31
Scientific Instruments ..	25	30	27	26	19	66
Electricity Generation ..	60	326	373	392	381	322
Canning and Preservation of fruits	15	52	37	39	34	33
Umbrella Industry ..	—	—	15	14	24	—
Others ..	—	2,030	2,176	2,493	2,598	3,374
TOTAL ..	2,201	5,162	7,202	8,079	9,613	11,214

Source: Directorate of Economics and Statistics, Himachal Pradesh.

P—Provisional.

23. *Wages and earnings.*—The data collected under the Payment of Wages Act, 1936, which applies to employees earning less than Rs. 400 p.m. for various manufacturing industries is given below:—

TABLE 6—AVERAGE DAILY/ANNUAL MONEY EARNINGS IN HIMACHAL PRADESH BY INDUSTRIES FOR PERSONS EARNING LESS THAN Rs. 400 P.M. DURING 1969

Industries	No. of factories covered under the Act	No. of factories submitting returns	Per capita earnings (Rs.)	
			Daily	Annual
1. Textiles	3	—	—	—
2. Footwear	2	1	4.45	1,380.80
3. Wood and Cork	6	3	9.98	2,925.05
4. Paper and paper products	1	—	—	—
5. Printing and publishing	2	1	11.21	3,328.94
6. Chemical and Chemical products	5	—	—	—
7. Petroleum and Coal	1	—	—	—
8. Non-metallic mineral products	8	1	8.36	2,523.88
9. Basic metal industries	7	2	10.46	3,120.53
10. Metal products (except machinery and transport equipment)	1	—	—	—
11. Machinery (except electrical machinery)	11	5	7.63	2,353.69
12. Electrical machinery	10	4	4.23	1,279.00
13. Transport machinery	33	10	7.64	2,358.58
14. Miscellaneous industries	10	4	6.44	1,836.36
15. Electricity, Gas and Steam	5	—	—	—
TOTAL ..	105	31	8.36	2,521.44

Source:—Labour Bureau, Government of India, Simla.

24. Average daily earnings of Industrial workers (industry codes 23 to 84) in Himachal Pradesh were Rs. 8.36 during 1969. This of course, is subject to severe limitation of the non-response on the part of the factories. The corresponding figure of the all India level was Rs. 8.46 per day. These figures, however, are strictly not comparable as the trend fluctuates with the increase or decrease in the number of the factories submitting returns.

25. *Industrial Relations*.—The people of this Pradesh are basically peace loving and there have been very few industrial strikes, etc., as is borne out by the following table:—

TABLE 7—NO. OF INDUSTRIAL DISPUTES, STRIKES, ETC., 1968 TO 1970

Year	No. of industrial disputes referred to industrial relations machinery	No. of strikes and lockouts	No. of workers involved	No. of mandays lost
1	2	3	4	5
1968	33	1	754	1,508
1969	33	—	—	—
1970	36(P)	7	3,984	23,560

26. Number of registered trade unions in Himachal Pradesh as on 31.12. 1971 were as follows:—

District	No. of registered Trade Unions
1	2
Simla	32
Bilaspur	5
Mandi	20
Kangra	8
Chamba	1
Sirmur	6
Mahasu	11
Himachal Pradesh	83

(P)-Provisional.

FOREST LABOUR

27. Forests play a prominent role in the economy of Himachal Pradesh since they contribute about 25 per cent to the total revenue of the State. Forests in Himachal Pradesh are spread over an area of 21,744 sq. kilometres (about 38 per cent) of the total area of the

State. According to the national forest policy, 60 per cent of the total area of a hill State like Himachal Pradesh should be covered by forests. According to 1961 Census, out of the total working force, about 15,486* persons were engaged in forestry and logging in the Pradesh. Forestry is an important industry in the public sector and rosin and turpentine factories are being run at Bilaspur and Nahan employing about 322 workers. A very large number of forest labour is ordinarily employed by the State Forest Department on departmental works such as afforestation, protection of forests, construction and maintenance of roads, buildings, etc. On a rough estimate about 12,398 daily-paid workers were employed by the State Forest Department during 1970. The Minimum Wages Act, 1948 which has been extended to cover 'employment in forestry and timbering operations' in Himachal Pradesh prescribes a minimum† wage of Rs. 3 per day for adult male and Rs. 2.70 per day for adolescent/female adult for the unskilled workers. In this context, it will be pertinent to mention the recommendations‡ of the National Commission on Labour.

"A permanent labour corps divorced from agriculture and available for employment on forest works should be organised on the same lines as agriculture labour corps recommended earlier. In the years to come, exploitation of forest resources and establishing of forest based industries will make organisation of such a force necessary. A beginning should be made in selected area in each State".

UN-ORGANISED LABOUR

28. The 1961 Census puts the total number of non-agricultural wage earners in Himachal Pradesh at 1,94,560. From this, if the number of workers employed in organised sector, i.e., 1,36,034, is deducted, the number of workers in the un-organised sector could be roughly estimated to be about 58,526. By working the geometric growth rate during 1951—61 of the working force, the population of un-organised wage earners comes to 1,04,911 in 1970. This, of course, excludes cottage and household industries. Proper statistics for such un-organised labour are not available and in its absence it is not possible to make a meaningful analysis of their problems. In order to formulate suitable ameliorative measures for different categories of un-organised labour, the authorities concerned will have to play an increasingly important role in providing legislative protection. It will also be necessary to conduct detailed surveys about conditions of work in these employments as has been stressed by the National Commission on Labour.

*Working force—1951—1961—Himachal Pradesh—Registrar-General of India.

†Fixed under Notification No. 2-27/69-SI(MW), dated 1-9-1969—Industries Department, Himachal Pradesh.

‡Report of the National Commission on Labour—p. 413, para 28.82.

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SOCIO-ECONOMIC PROBLEMS OF THE NORTH-EASTERN HILL REGIONS OF INDIA

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The north-eastern hill region is the most isolated part of India comprising almost the entire area of Meghalaya, Mizoram, Nagaland, United Mikirs and North Cachar Hills, Arunachal, Manipur and Tripura with the exception of a negligible plains areas in them. The Brahmaputra valley of Assam separates Arunachal formerly known as the North-East Frontier Agency from the other hill areas of north-eastern India. Much of the region is full of hill ranges with deep gorges and steep terrains and is not easily accessible but the landscape is beautiful. The climate of most of these areas is bracing and entertaining. The altitudes vary between 2,000 feet to 20,000 feet. The average annual rainfall is between 125 cm. to 300 cm. Most of the rains occur in the months from April to October. Kameng district of Arunachal records a minimum temperature of (-5°C) and during the major part of the year is covered with snow. Some parts of Nagaland situated at a height of 8,000 feet and above are also covered with snow during January and February when the effect of pinching cold is felt by the people living nearby.

AREA AND POPULATION

2. The north-eastern hill region has an area of about 1.92 lakh square kilometres and a population of 54 lakhs according to 1971 Census. The distribution of the population has been shown in Table 1. The area is about 65 per cent of the total area of the north-eastern region. The population is almost entirely tribal, though in some of these areas there are sufficient number of other people also living alongwith the colourful tribes. There are more than fifty tribes in the region with their own distinctive language and cultural features. Each tribe has its own tradition and customs which are peculiarly their own. Their dress, songs, dances, marriage customs, social and economic behaviour also differ. The major tribes are Nagas, Mizos, Khasis and Jaintias, Garo, Kacharis and Mikirs, etc.

WORKING CLASS

3. About 36 per cent of the region's population constitute the working class compared to the All-India average of 34 per cent. Occupational distribution of the hill States and Union Territories of the region is given in Table 2.

PROBLEMS

4. The region's economic situation is virtually as that of an isolated area in the country due mainly to the lack of communication facilities. From the long past till the country attained independence, whatever social and economic activities in a modern scale were undertaken in India either in the field of education, industrialisation, communication systems like building of roads and railways as well as in other fields, this region had extremely meagre share. This resulted in the cumulative economic back-log and disparity of serious proportions which ultimately led to the disintegration of the Assam State into different States and Union Territories. The major fields of problems which affect the region are (a) communication, (b) agriculture, (c) political and economical instability, (d) standardised education facilities (e) major industrial growth and (f) destruction of forest wealth.

COMMUNICATIONS

5. Even after independence, the problem of communication continued to remain more or less the same till the end of Second Five Year Plan. The importance of communication came to light mainly after the Chinese aggression when large scale construction of roads and culverts and bridges were taken up for immediate logistical reasons and for the larger perspective of developing the area. There is only one metre gauge railway system serving the entire north-eastern region and none of the capitals of the hill States/Union Territories is connected by rail, the total length of railways within the hill region being about 30 kilometres. Of late, the road communication and helipads/air strips have been established in the capital and important towns. In addition to these efforts of the State Government, the Border Roads Organisation has been building major roads on a large scale which, in due course, are bound to open the hinterland of the forests, etc., for economic exploitation.

AGRICULTURE

6. A large proportion of the people, above 75% of the working class in this region get their livelihood from agriculture. The shortfalls in agriculture are many, viz., (i) practice of shifting cultivation, (ii) slow process of adaptability to the modern methods in agriculture, (iii) lack of irrigation facilities and (iv) lack of investment capability.

7. Shifting cultivation or *jhumming* as it is locally known, is a primitive method, where a patch of jungle is burnt and agricultural crops planted. After clearing and burning, high

temperatures activate organic decomposition and mineral elements are freed. This increases the surface fertility. After continued cultivation for a period of 2 years or so, an entirely new patch is selected and the present one is left as fallow for 3 to 8 years. This process follows a set of cyclic routine. The extensive practice of shifting cultivation despite causing soil erosion is responsible for reduction in available per capita cultivable land and forest wealth. The immediate need is to rationalise the process by (i) gradual conversion to terraced cultivation, if possible by utilising the funds available from the Small and Marginal Farmer's Development Agency and other allied agricultural schemes, (ii) educating the people regarding the advantages of other forms of cultivation and creating confidence in them and (iii) utilisation of all forest fallows in short rotations. It may be mentioned that various State Governments/Union Territories have already taken up land reclamation schemes to bring the practice of shifting cultivation under control. In steeper slopes where terraced cultivation is not possible, plantation of economically valuable forest species and orchards can be encouraged, which will ultimately help control soil erosion and de-forestation.

8. Although the north-eastern hill region receives heavy rainfall, yet irrigation is necessary for sustained crop production. Only a small proportion of the crop area in the region is under irrigation and is far from adequate. Three types of irrigation systems are prevalent in the hill region (a) contour channels for distributing water from hill streams at higher altitudes, (b) contour channels leading from small reservoirs built by constructing dams over streams, (c) lift irrigation with manual/power devices to lift water from the rivulets or streams in the valleys. Of these, the first is mostly practised. There is sufficient scope for medium and minor irrigation in the region, where there are innumerable perennial streams. Though lift irrigation with manual power exists in the valleys, pumps should be made popular and power should be made available at cheaper rates. There are serious limitations to irrigational projects in the area viz., (i) irrigable areas are scattered in patches in the difficult terrains, (ii) chance of rapid siltation of reservoir areas due to soil erosion and (iii) lack of comprehensive survey of the region of water resources and irrigational potentialities.

9. The rate of adaptability to the improved agricultural techniques is relatively low in the region. Coverage of area under improved seeds is very low and plant protection measures much below the desired level, even though, the incidence of pests and diseases is very high. There is a great potential in the region for economic plantation like oranges, pine apples, pears, bananas, cash crops, many valuable forest species, coffee and tea. It is necessary that suitable propaganda and encouragement to farmers is made so that rural farmers may adopt the modern methodology of agriculture.

10. Investment capability of the cultivator in the region is as low as in other tribal regions of the country. Though no reliable estimate is available it is hardly possible that the cultivators invest more than Rs. 60 per acre on an average.



* * * * *



Terraced cultivation in a hill slope of Nagaland

POLITICAL AND ECONOMIC INSTABILITY

11. The situation in the States of north-eastern region was different from that of other parts of India before independence. There was no full-fledged administration and the British rulers were mainly interested in maintaining law and order only. On the eve of independence, there was a widespread feeling amongst the tribals of this region that unlike British, the men from plains who had the advantage of being economically more advanced and culturally different might dominate them politically, economically and culturally. This started a fierce resentment resulting in agitation amongst the tribals to dis-associate from the States of Assam and even open rebellion in favour of secession from India in the areas of Nagaland and Mizoram. Thus, it will appear that most of the hill region was under a political and administrative unrest when other parts of the country were enjoying more tranquil atmosphere to march ahead in all the fields of development during the Five Year Plans.

EDUCATION

12. Christian missionaries are the pioneers in the field of imparting education in some of the areas in the region at the beginning. After independence, schemes for rapid expansion of educational facilities were taken up and, as a result, barring Arunachal Pradesh, the growth rate of education in this region has been much higher in comparison with other States. Table No. 3 shows the average number of villages that are served by different types of schools in the region.

13. Implementation of various educational programmes and imparting of education up to the higher secondary level is not much of a problem at present but much still remains to be done in this field. Education has to be made more standardised and students of this region have to be enthused and inspired for study in science and mathematics from the beginning of their student career. For this purpose, it has been felt necessary that primary, middle and higher secondary schools are manned by specially qualified and trained teachers, which the schools of this region are lacking.

INDUSTRIAL GROWTH

14. The region has no organised industry at present excepting a few which were set up towards the end of the Third Plan period. Industrial employment at present is negligible. The reasons for not having a rapid industrial growth in the region are many as discussed below:—

- (i) Not much is yet known on the mineral resources of the region as no systematic survey has been conducted and the prospect of mineral-based industrial development in the region is still difficult to plan.

- (ii) On account of the small population of about 54 lakhs scattered over a big area and their low income in liquid money, local market for large industries is insufficient. The bulk of the region's population lives in self-sufficient village economies and all village industries and manufactures are chiefly for family consumption and not for marketing. The demand in the local market for manufactured articles is thus much limited.
- (iii) Paucity of technical manpower is a bottle-neck for formulation and execution of industrial development in both the public and private sectors. Although local people are being trained gradually, the region still depends on the trained personnel from outside.
- (iv) The region is situated mostly within mountainous terrain. Within a few years although major part of the region will be well connected by roads, yet it will not be economical on the part of any large scale industries to transport raw materials over long distances on road.

DRINKING WATER FACILITIES

15. The problem of water supply in the region, specially during the summer, is very acute and drinking water facilities are available only in small number of villages. The reasons are:—

- (i) Long distances of the villages from perennial sources.
- (ii) Water supply through gravitation to villages situated at higher altitudes is very expensive and not easily possible.
- (iii) Lack of sub-soil water.

16. It is, however heartening to note that vigorous programmes have been taken up by different States/Union Territories in the region for providing a large number of villages with water supply which, of course, is a time-consuming affair.

17. The foregoing paragraphs demonstrate some of the aspects leading to the backwardness of the region. However this region has vast potentialities in many fields like (i) agro-forest-based industries, (ii) cottage industries and (iii) tourism to bring its level of economic and social development to the same level as obtained in other advanced parts of India.

18. The region is ideally suited for excellent evergreen and semi-evergreen forests and if exploited will become a good source of revenue to the region and its people. With the limited scope of setting up industries at present, some of the forest-based industries like integrated wood industry, paper and veneer mills have already been set up. But the important task remains in the halting of progress of *jhuming* and further destruction of virgin forest wealth. The climate being congenial for horticulture, minor industrial programmes based on fruits like oranges, pears, plum and pine apple, etc., have immense possibilities. The region has a good potential for tourist attraction also. Places like Shillong, Kohima, Aijal, Bomdilla, Khonsa, Hayuliang, Loktak and Anukuti may develop into nice hill stations for

the people of eastern India. It may also be mentioned that 'Parasuramkund' in Arunachal is a famous place of pilgrimage since ancient times and it can be developed to attract more pilgrims as well as tourists. People of this region have a long tradition of making handicrafts and beautifully designed handloom products which can find good market for consumption within India and outside. With the development of tourism these products may find good demand amongst the tourists in addition to providing primary and subsidiary means of livelihood to the people.

19. Above all, the people of the region are endowed with physical and natural gifts. Their way of life on a difficult terrain, demands them to be laborious and sturdy. They are healthy with good physique and with potential to produce a good number of promising athletes for the country. The people are rich in aesthetic sense and are basically honest. Many are not yet introduced to the ills of the modern society and are so to say unsophisticated. The hill man has a sense of pride in his heritage and a feeling of equality deeply rooted in his tradition.

TABLE 1—DISTRIBUTION OF AREA, POPULATION, SCHEDULED TRIBE POPULATION, LITERACY PERCENTAGE OF STATE/UNION TERRITORIES AND HILL REGION OF NORTH-EASTERN INDIA

District/Union Territory/State	Area in sq. kms.	Population	Density per sq. km.	Scheduled tribes population	Population of scheduled tribe as per- centage of total	Percentage of literacy
1	2	3	4	5	6	7
United Mikir Hills of North Kachar Hills of Assam ..	15,222	4,55,357	30	2,62,622	57.67	28.81
Arunachal ..	83,578	4,67,511	6	3,69,408	79.02	9.34
Mizoram ..	21,087	3,32,390	16	3,13,299	94.26	50.91
Manipur ..	22,356	10,72,753	48	3,34,466	31.18	32.80
Meghalaya ..	22,489	10,11,699	45	8,14,230	80.48	28.43
Nagaland ..	16,507	5,16,449	31	4,57,602	88.61	27.33
Tripura ..	10,477	15,56,342	149	4,50,544	28.95	30.87
TOTAL ..	1,91,716	54,12,501	28	30,02,171	55.46	—

Source—Census of India, 1971.

TABLE 2—DISTRIBUTION OF WORKERS AS CULTIVATORS, AGRICULTURAL LABOURERS AND OTHER WORKERS IN THE NORTH-EASTERN HILL REGION

(Figures in cols. 2, 3, 5, and 7 in thousands)

State/Union Territory			Total workers	Culti-vators	Cultivators as percent-age to total	Agricultural labourers	Percentage of agri-cultural labourers to total	Other workers	Other workers as per cent to total workers
1			2	3	4	5	6	7	8
					%		%		%
Arunachal	..	P	254.8	213.9	83.92	65.6	2.22	35.3	13.86
		M	143.1	107.3	74.97	3.2	2.25	32.6	22.78
		F	111.7	106.6	95.39	2.4	2.18	2.7	2.43
Meghalaya	..	P	441.7	312.8	70.82	43.0	9.73	85.9	19.45
		M	268.6	176.5	65.69	25.0	9.31	61.1	25.00
		F	173.1	136.4	78.76	18.0	10.39	18.8	10.85
Manipur	..	P	384.1	252.9	65.88	14.6	3.82	116.6	30.35
		M	246.2	167.2	67.90	8.9	3.63	70.1	28.47
		F	137.9	85.7	62.14	5.7	4.15	46.5	33.71
Nagaland	..	P	268.6	210.0	78.19	3.9	1.44	54.7	20.37
		M	154.6	100.6	65.07	2.5	1.62	51.5	33.31
		F	114.0	109.4	96.00	1.4	1.20	3.2	2.80
Tripura	..	P	434.8	234.6	53.96	85.7	19.70	114.5	26.34
		M	395.0	217.7	55.13	77.0	19.49	100.3	25.38
		F	39.8	16.9	42.37	8.7	21.78	14.2	35.85
TOTAL		P	1,784.0	1,224.2	68.62	152.8	8.57	407.0	22.81
		M	1,207.5	769.3	63.71	116.6	9.66	321.6	26.63
		F	576.5	454.9	78.91	36.2	6.28	85.4	14.81

This excludes the figures for the hill regions of United Mikirs and North Cachar as also Mizoram for which separate figures are not available.

Source:—Census 1971 (Provisional report).

P—Persons.

M—Males.

F—Females.

TABLE 3—NUMBER OF SCHOOLS IN DIFFERENT STATES/UNION TERRITORIES OF THE NORTH EASTERN HILL REGION OF INDIA, 1970

State/Union Territory	No. of inhabited villages	Number of primary schools	No. of primary schools per 100 villages	No. of middle schools	No. of middle schools per 100 villages	No. of high/higher secondary schools	No. of high/higher secondary schools per 100 villages
Manipur	1,866	2,411	129	880	47	123	7
Nagaland	814	947	116	163	20	46	6
Tripura	4,754	1,458	31	220	5	86	2
Arunachal	2,451	466	19	41	2	16	—
India	5,70,014	4,00,397	70	87,827	15	34,317	6

Figures for Mizoram and Meghalaya are not available.

Source :—Ministry of Education and Social Welfare, Government of India.

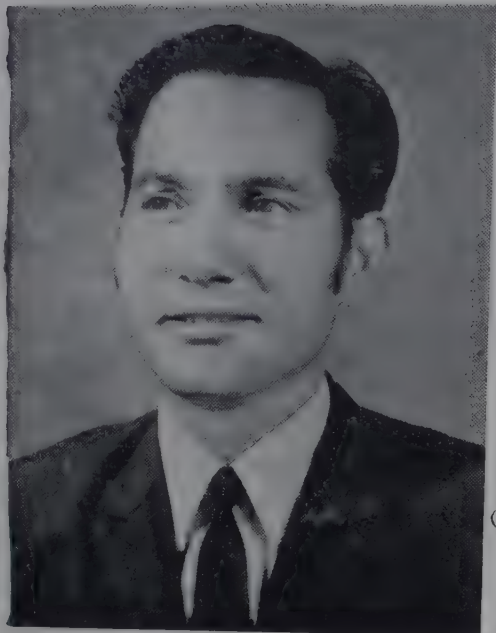
TABLE 4—PLAN OUTLAY UNDER ELEMENTARY EDUCATION

State/Union Territory	Population	1969-74 Fourth Plan outlay (Rs. in lakhs.)	Per Capita Plan outlay on Elementary education (Rs.)
Manipur	10,72,753	200.00	18.64
Nagaland	5,16,449	225.00	43.57
Tripura	15,56,342	134.20	8.62
Arunachal	4,67,511	105.08	22.48
India	54,79,49,809	23,454.16	4.28

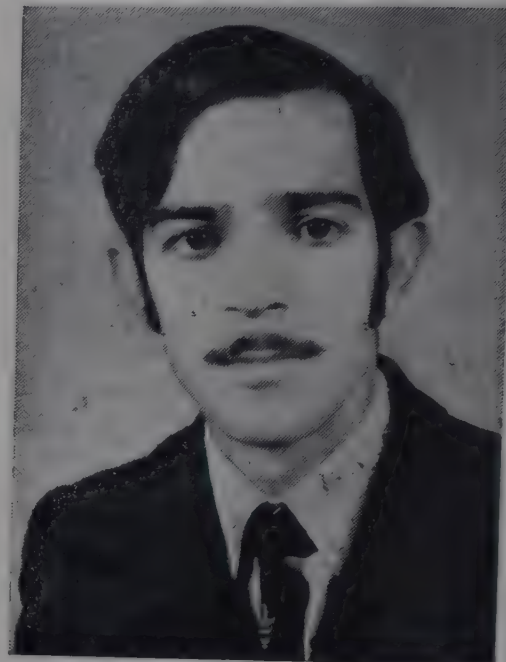
Figures for Mizoram and Meghalaya are not available.

Source :—Planning Commission.

DEVELOPMENT OF HORTICULTURE IN HIMACHAL PRADESH



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Right in the lap of Himalayan ranges, Himachal Pradesh is situated in the extreme north-west of India. The territory is almost wholly mountainous with altitudes ranging between 1,500 feet to 21,000 feet above the mean sea level. It has a deeply dissected topography, complex geological structure and a rich temperate flora in the sub-tropical latitudes. The total geographical area is 55,673 square kilometres and is larger than that of Punjab, Haryana, Kerala and Nagaland.

2. Physiographically, the territory can be divided into two regions—southern and northern. The southern region of the State is as hot as the plains of Punjab while the northern region has a temperate summer and a winter with extreme cold and heavy snow-fall. The districts of Simla and Sirmur have alluvium soils while the remaining area has forest and hill soils. The normal annual rainfall is 1,523 mm. (60 inches)—the highest is noticed in Kangra which is closely followed by Simla.

AGRICULTURE V/S HORTICULTURE

3. Agriculture and horticulture are the most important occupations of the people of this Pradesh and more than 90 per cent of the population of the State is directly or indirectly

dependent for their livelihood on these occupations. The agro-climatic conditions prevailing in the Pradesh are entirely different from the ones existing in the plains. The need, therefore, was felt to evolve a strategy to make best possible use of the limited land resource available. With the advance of horticulture in the Pradesh, it has been established that horticulture gives higher returns per unit of area as compared to basic agricultural crops. It has, therefore, been felt that instead of concentrating on cereal production, more efforts should be made to accelerate the pace of development of horticulture, vegetables, vegetable seed production and allied items, etc.

4. As will be evident from what follows, horticultural development has proved significant for supplementing the otherwise meagre income of the people of the Pradesh. In the recent past, the production of temperate fruits, especially apple, has gone a long way towards ameliorating the economic condition of the farmers. Keeping all these developments in view, a separate Department of Horticulture was created in 1970 so that concentrated efforts could be made for its development, whereby our aim to bring at least one-third of the culturable area in the Pradesh under horticulture is achieved. The favourable agro-climatic conditions of the Pradesh have made the horticultural potential one of the main hopes of the future.

WHY HORTICULTURE?

‘Horticulture in the upper reaches and mid-hills and cereals in the valley seems to be the schematic design of the things, the Nature has designed for Himachal Pradesh’

5. Before discussing the subject, it will be worthwhile to consider the following facts which stress and signify the importance of horticulture over agriculture. The main advantages or the impact of horticulture on the economy of the Pradesh are mentioned below:—

- (i) *Higher income per unit area.*—It is a well known fact that the fruit growing in most of the areas yields many times more income than the ordinary crops. This is particularly true of the temperate fruits as apples, peaches and plums. In case of sub-tropical fruits like citrus, mango, *litchi* and grapes, the income is higher from well-managed plantations. Even in the irrigated valley areas where high yielding varieties of wheat, rice and maize have good potentialities, the cultivation of vegetables and potatoes will yield much more income per unit area. It may be pointed out that the science of horticulture includes fruit, vegetable and flower cultivation. It is thus obvious that the income and economy of the vast majority of our people is directly related to horticulture.
- (ii) *Utilisation of areas unsuitable for ordinary crops.*—There are vast areas which are either slopy or otherwise unsuitable for the cultivation of crops like wheat, rice, maize, etc. These are either *ghasnis* (the land on which only wild grass grows) which are considered unsuitable for cultivation or are having such a degree of slope that these cannot be put to agricultural use. Most of these areas can be

put to economic utilisation with the plantation of suitable varieties of fruits. One of the most important changes that is taking place in Himachal Pradesh is the utilisation of such areas which were considered to be unfit for any use but for raising grass only a few years ago. Himachal Pradesh has about 1,50,741 hectares under culturable waste and 11,35,211 hectares under permanent pastures and other grazing lands. A good percentage of these areas can be put to better economic utilisation by planting orchards.

- (iii) *Fruit growing an important factor in soil conservation.*—Soil conservation is one of the most important aspects for hills. The topography of the Pradesh is such that most of our lands have slopes. Cultivation of such slopes causes serious soil erosion. It has been estimated that soil erosion in unprotected lands can be as much as 50 tons per acre annually. It has also been estimated that about 400 to 1,000 years or even more, are required to build one inch of top soil. Experiments in Maharashtra have revealed that loss of soil on 1.18 per cent slope is about 0.53 tons under condition of natural vegetation as compared to 37 tons in case of cultivation of crops in *rabi* season. Although exact statistics are not available, it may not be wrong to assume that thousands of acres of valuable land are being rendered useless annually on account of soil erosion. Fruit trees play an important role in checking soil erosion. The erosion in case of orchards with soil under sod (grass) is almost negligible. Thus, the orchards make an important contribution towards increasing the production from areas which otherwise will be rendered unproductive. Fruit growing, therefore, helps tremendously the economy of the farmers as well as the Pradesh as a whole.
- (iv) *Utilisation of nature's gifts.*—There are vast tracts of land in Himachal Pradesh which are presently of no economic importance for the farmers as well as the State. These areas have a lot of natural growth of wild fruit like *kainth* (wild pear), *kino* (wild persimmon) wild *ber*, *kahu* (wild olive) and other such strains. These are growing in areas which are unsuitable for ordinary crops. Horticulture is the only answer for the proper exploitation of such areas. The wild trees can be converted into commercial varieties by large scale top working. It is by following the avocation of horticulture that these waste areas can be converted into a good economic proposition. This aspect had been totally lost sight of earlier but is being paid due attention now.
- (v) *Indirect economic benefits.*—There are large number of small scale industries and other avocations which are directly and indirectly dependent upon horticulture. Some of the important aspects are as follows:—
- (a) Almost the entire produce is marketed in packing cases. As such a large number of industries, to produce such cases, have sprung up in the Pradesh which are of great economic importance to the areas concerned.
 - (b) Fruit processing and cold storage industries are coming up in the Pradesh and elsewhere in the country. These are mostly dependent upon horti-

- cultural produce. These industries and the direct economic benefits from them would not have been there in the absence of horticultural produce.
- (c) A large fleet of transport vehicles is engaged in the transport of horticultural produce and this number is increasing every year. Besides providing livelihood to the people engaged in transport operations, it provides substantial income to the State exchequer by way of taxation.
- (d) A large number of markets and the wholesale and retail shops are engaged in the distribution of the horticultural produce. This provides livelihood to a large number of families in the Pradesh and elsewhere.
- (e) A large number of people are engaged in the management of the orchards, handling of fruits and industries directly or indirectly related to the production and marketing of horticultural produce.
- (vi) *A national asset.*—The consumption of about 2 ozs. of fruits per head per day is now considered to be absolutely essential for an individual. The production of fruits in India falls short of this minimum requirement. Himachal is, therefore, helping the nation in its basic nutritional requirements by increasing the production of fruits. Some of the important national projects like Bhakra Dam, Sutlej-Beas Link, Pong Dam are situated in Himachal. The catchment areas of the rivers feeding these projects lie in Himachal Pradesh. The life of these projects is directly related to the amount of soil erosion that takes place in these areas. The large scale fruit plantations in Himachal Pradesh will check soil erosion and help reduce the intake of silt in these projects. The economic uplift of the people of the Pradesh will mostly be a result of horticultural development.

GROWTH OF AREA UNDER HORTICULTURE

6. The area under various kinds of fruits in Himachal Pradesh from 1950-51 to 1970-71 has been reported in Table 1.

TABLE 1—AREA UNDER FRUITS IN HIMACHAL PRADESH

(In acres)

Year	Apple	Other temperate fruits	Nuts and dry fruits	Citrus	Other sub-tropical fruits	Total
1950-51	..	..	..	..	..	1,000
1955-56	..	..	..	..	..	3,000
1960-61	..	..	..	7,484	2,229	573
1965-66	..	..	..	31,267	10,202	1,743
1966-67	..	..	..	37,267	11,702	2,193
1967-68	..	..	..	43,267	13,402	2,643
1968-69	..	..	..	49,767	15,202	3,093
1969-70	..	..	..	57,767	16,902	3,693
1970-71	..	..	..	65,767	18,602	4,293
						13,522
						6,866
						1,09,050

7. It is evident from the data presented above that starting from 1,000 acres in 1950-51, the area grew to 55,000 acres in 1965-66 i.e., by the end of Third Five Year Plan. After that with the merger of hill areas of Punjab with Himachal Pradesh, within a period of five years, about one hundred per cent increase has been registered in total area under fruits. Table 2 gives the compound growth rates for area under various kinds of fruits for two periods i.e., 1960-61 to 1965-66 and 1966-67 to 1970-71.

TABLE 2—COMPOUND GROWTH RATES FOR AREA UNDER VARIOUS KINDS OF FRUITS

(Percent per annum)

Period	Compound growth rates for area under					
	Apple	Other temperate fruits	Nuts and dry fruits	Citrus	Other sub-tropical fruits	All fruits
1	2	3	4	5	6	7
1960-61 to 1965-66	.. 33.1	35.7	24.9	19.1	24.0	29.8
1966-67 to 1970-71	.. 15.2	12.3	18.3	12.2	18.5	14.5

8. Although, the data in two series shows disparity, yet we can say that the area under horticulture has increased significantly. Before we study the production trends, we would like to give a comparative picture of the area under fruits in some neighbouring States like Jammu and Kashmir, Uttar Pradesh, etc. Table 3 gives the data relating to total geographical area, total cultivated area, total area under fruits, area under apples alone and their inter-related facts.

TABLE 3—AREA UNDER FRUITS IN HIMACHAL PRADESH, JAMMU AND KASHMIR AND UTTAR PRADESH

(Area in Sq. Km.)

State	Total geographical area	Total cultivated area	Total area under fruits	Apples	Column 4 as percent- age of column 2	Column 4 as percent- age of column 3
1	2	3	4	5	6	7
Jammu and Kashmir	.. 2,22,870	7,730	278.25	209.05	0.12	3.59
Himachal Pradesh	.. 55,673	5,910	344.18	201.40	0.62	5.82
Uttar Pradesh	.. 2,94,366	17,864	396.59	264.39	0.13	2.22

9. The data in the above table presents very interesting comparisons. The percentage of total area under fruits to total geographical area and also that of total area under fruits to the total cultivated area for Himachal Pradesh works out much higher as compared to

ammu and Kashmir and Uttar Pradesh as well. Here one gets a hint that Himachal Pradesh is one of the most advanced States on the horticultural map of India. This aspect will be made more clear when we study the production aspect. The fruit bearing area has also increased considerably as will be evident from the data given in Table 4.

TABLE 4—BEARING AREA UNDER DIFFERENT FRUITS IN HIMACHAL PRADESH

Year	Estimated bearing area (in acres) under							
	Apple	Other temperate fruits	Nuts and dry fruits	Citrus	Other sub-tropical fruits	All fruits		
1960-61	..	..	3,000	1,500	150	1,700	80	6,430
1965-66	..	..	6,000	2,229	500	3,026	1,000	12,755
1966-67	..	..	7,484	2,906	573	3,550	1,538	16,051
1970-71	..	..	25,779	10,202	1,489	7,272	4,516	49,256

10. The bearing area under apples and all kinds of fruits has increased by about 300 percent and 200 percent, respectively, during 1966-67 to 1970-71.

GROWTH OF PRODUCTION OF FRUITS

11. The data relating to the production of fruits under various categories has been presented in Table 5.

TABLE 5—PRODUCTION OF FRUITS IN HIMACHAL PRADESH

Year	Production (in tonnes) of							
	Apple	Other temperate fruits	Nuts and dry fruits	Citrus	Other sub-tropical fruits	All fruits		
1960-61	..	..	12,000	3,000	150	3,400	160	18,710
1965-66	..	..	24,000	4,400	500	6,010	2,000	36,910
1966-67	..	..	28,900	5,800	570	7,100	3,000	45,370
1970-71	..	..	1,03,120	20,400	1,490	14,540	9,030	1,48,580
1971-72	..	..	1,25,060	23,800	1,930	17,140	10,400	1,78,330

12. The production of apple as well as all fruits pooled together increased by about 100 per cent during the period 1960-61 to 1965-66. Also, during 1966-67 to 1971-72, the gross fruit production increased by about 300 per cent and the production of apple alone increased by about 350 per cent during the same period. The compound growth rates for all categories of fruits for two periods i.e., 1960-61 to 1965-66 and 1966-67 to 1971-72 have been reported in Table 6.

TABLE 6—COMPOUND GROWTH RATES FOR FRUIT PRODUCTION IN HIMACHAL PRADESH

(Percent per annum)

Period	Compound growth rates for production of					
	Apple	Other temperate fruits	Nuts and dry fruits	Citrus	Other sub-tropical fruits	All fruits
1	2	3	4	5	6	7
1960-61 to 1965-66	.. 14.9	7.9	27.2	12.0	65.8	14.5
1966-67 to 1971-72	.. 34.1	32.6	27.6	19.2	28.2	31.5

13. Now, if we refer back to the trends of the growth of areas as given in row 2 of Table 2, we observe that the rates of the growth of production of various categories of fruits and all fruits pooled together are significantly higher as compared to the rates of the expansion of area specifically during post 1966-67 period i.e., after the formation of Vishal Himachal Pradesh. The data relating to the per unit production of all fruits as well as of apple alone for Himachal Pradesh, Jammu and Kashmir and Uttar Pradesh have been presented in Table 7 below:—

TABLE 7—PER UNIT PRODUCTION OF FRUITS IN HIMACHAL PRADESH, JAMMU AND KASHMIR AND UTTAR PRADESH

State	Year	All fruits			Apple		
		Area (acres)	Production (tonnes)	Yield (tonnes per acre)	Area (acres)	Production (tonnes)	Yield (tonnes per acre)
Jammu and Kashmir	.. 1965-66	57,000	40,500	0.71	42,750	75,450	1.76
	1968-69	68,757	89,374	1.28	51,558	80,437	1.56
Himachal Pradesh	.. 1965-66	55,000	36,910	0.71	31,267	24,000	0.77
	1968-69	85,050	81,080	0.94	49,767	50,520	1.02
Uttar Pradesh	.. 1965-66	76,000	47,500	0.62	51,067	35,625	0.69
	1968-69	98,000	N.A.	N.A.	65,333	N.A.	N.A.

14. The production per unit area of all fruits recorded an increase of 0.23 tonnes per acre in Himachal Pradesh during 1965-66 to 1968-69 whereas the parallel figure for apples was 0.25 tonne per acre. We may note here that a breakthrough has been achieved in apple cultivation in this State. The production per unit of area of apple in Jammu and Kashmir was 1.76 tonnes per acre in 1965-66 which deteriorated to 1.56 tonnes per acre by 1968-69.

ESTIMATE SURPLUS OF FRUITS IN HIMACHAL PRADESH

15. The surplus of fruit production is estimated at 20 per cent of the total produce and is exclusively meant for processing purposes. The data relating to estimated surplus of fruits in the Pradesh has been given in Table 8 below: -

TABLE 8—ESTIMATED SURPLUS OF FRUITS

(Tonnes)

Year	Estimated surplus of					
	Apple	Other temperate fruits	Nuts and dry fruits	Citrus	Other sub-tropical fruits	All fruits
1960-61	2,400	1,500	70	1,700	80	5,750
1965-66	4,800	2,200	250	3,000	1,000	11,250
1970-71	20,620	10,200	740	7,270	4,515	43,345
1973-74 (expected)	34,600	15,400	1,490	11,070	5,805	68,365

16. It can be seen that the surplus of fruits and apple increased by about 100 per cent during 1960-61 to 1965-66, whereas during 1965-66 to 1970-71 the surplus of fruits increased by about 380 per cent and that of apple by about 290 per cent.

17. The processing of fruits is a necessary adjunct of a developing fruit industry. A substantial percentage of fruit production cannot be marketed economically as dessert fruit. The processing is the only suitable answer to avoid the wastage. A lot has been done in this direction in the Pradesh and there are 6 Fruit Processing and Canning Units at present in the State:—

(i) Naubahar	..	Simla district
(ii) Dhaulakuan	..	Sirmur district
(iii) Rajgarh	..	Sirmur district
(iv) Bagthan	..	Sirmur district
(v) Rajpura	..	Chamba district
(vi) Kalpa	..	Kinnaur district

18. The combined processed products of these units during 1971-72 stood at 53,907 kilograms and were valued at Rs. 1,73,138. Some of the processed products (sarson-ka-saag) have found market in United Kingdom. The Directorate, apart from concentrating on processing aspect, also imparts training in fruit and vegetable processing and preservation.

19. In order to keep pace with the recent technological developments, there are 69 progeny-cum-demonstration orchards in the State and to meet the requirements of the needy

farmers, 15 fruit nurseries are functioning all over the State. Apiculture has also demanded attention and 22 bee-keeping stations have been established by now.

EXPORTABLE SURPLUS OF FRUITS

20. The statistics of exportable production of fruits have been presented in Table 9 given below. Exportable production means the part of the total produce which is sent to other parts of the country or outside the country.

TABLE 9—ESTIMATED EXPORTABLE PRODUCTION OF FRUITS IN HIMACHAL PRADESH

(tonnes)

Year			Apple	Other temperate fruits	Nuts and dry fruits	Citrus	Other sub-tropical fruits	All fruits
1960-61	..	..	9,600	1,500	70	1,700	—	12,750
1965-66	..	..	19,200	2,200	250	3,110	—	24,660
1970-71	..	..	82,500	10,200	750	7,270	—	1,00,720

21. If we refer back to Tables 5 and 8, we observe that out of total production of 1,48,580 tonnes, 1,00,720 tonnes (67.7 per cent) was estimated as exportable surplus and 43,345 tonnes (29.1 per cent) as estimated surplus for processing. The share of the consumed produce within the State works out to 3.2 per cent only. If we come to per capita consumption of fruits, during 1970-71, it came to about 1.348 kilograms per head per annum which is very much sub-standard.

22. Horticultural produce of Himachal Pradesh has been graded as top-class many times. The representatives from this State have won a large number of prizes at All-India fruit shows for different categories of fruits.

23. In order to facilitate the marketing of fruits, a warehouse has been constructed at Parwanu near Kalka. This provides temporary storage for the transshipment of fruits. This warehouse has two storage chambers of the size of 56.25' × 56.25' × 16' each. The Government has also constructed a cold storage-cum-warehouse at Delhi and Bombay. The cold storage at Delhi provides space for 3.5 lakh boxes. It will not only help the farmers to realize better profits for their produce but will also help the consumers get regulated supplies for longer periods.

IMPETUS FOR WILLING FARMERS

24. The details of horticultural loans advanced to farmers during various Plan periods have been reported in Table 10.

TABLE 10—HORTICULTURAL LOANS

(Lakh Rs.)

Period						Horticultural loans advanced
II PLAN	..	..	..	..	..	16.66
III PLAN	..	..	..	..	..	61.39
ANNUAL PLANS:						
1966-67	..	..	..	..	..	19.01
1967-68	..	..	..	..	..	17.43
1968-69	..	..	..	..	..	16.72
FOURTH PLAN:						
1969-70	..	..	..	..	..	13.80
1970-71	..	..	..	..	..	12.29
TOTAL	TARGET	IV	PLAN	..	..	90.00

25. Apart from these loans, an Agricultural Refinance Corporation Scheme of Rs. 26.00 lakhs for financing the planting of orchards has been finalised and the loans will be advanced through Land Mortgage Banks.

WORLD BANK PROJECT ON MARKETING OF APPLES

26. The purpose of the present project would be to introduce in Himachal Pradesh a more organised system of marketing to the greater benefit of both producers and consumers. The principal medium for this would be a net work of packing stations organised along modern lines but with a degree of sophistication appropriate to the stage of development already reached in the producing areas. The project is looked upon as the first phase of a wider one which would eventually embrace all the apple growing areas in the State. Initially 16 packing stations would be established in the four main producing districts with a combined capacity of 32,000 tons per annum. Three of these stations, located at the most strategic points in the marketing chain, would be associated with cold storages—also with individual capacities of 2,000 tons. The stations would receive apples from growers, make an initial payment for them, grade and pack the fruit and sell it to the best advantages. Orchardists would then receive a second payment based upon sales realizations. Apples placed in the cold storages would be fed into the markets over an estimated six months period.

27. As a means of further improving the marketing chain, a transshipment centre, providing shelter and other facilities, would be established at the Delhi/Haryana border, the focal point for supplies moving to centres such as Bombay, Calcutta and Madras. This centre would supplement the existing one at Parwanu on the Himachal Pradesh/Haryana border which provides similar facilities for apples being transported to the Delhi market.

28. A major component of the project would be concerned with the upgrading of roads serving the packing stations from the orchards and others used for the subsequent evacuation of the fruit. Although there is considerable pressure from growers for the construction of new roads it is considered that the improvement of the existing ones of critical importance to the industry should be given priority so as to avoid costly hold-ups of traffic such as occur at present.

29. The organisation primarily responsible for the implementation of the project would be the Agro-Industries Corporation Ltd. This is a recently established parastatal enterprise in which the Himachal Pradesh Government will have 51 per cent of the shares and the Government of India 49 per cent. Uptill now, the main activities of the Corporation have been the procurement and distribution of tractors together with some minor agricultural implements and other accessories. However, the functions envisaged for the Corporation include the construction, equipment and management of marketing facilities.

30. The total cost of the three-year project is estimated at about Rs. 87.2 million (U.S. \$11.6 million) with a foreign exchange component of 18 per cent. The packing stations are estimated to cost Rs. 17.4 million, the cold storages Rs. 9.6 million and the roads Rs. 56.4 million. Substantial benefits are expected to accrue through reduced marketing margins, reduction of spoilage, etc. The economic rate of return on the packing station component is calculated at 29 percent and the financial rate of return at 24 percent demonstrating that the project would be justified on general economic grounds and that it would be an attractive proposition to the Agro-Industries Corporation. The economic rate of return on the feeder roads component would be 19 percent.

PROJECTIONS OF AREA AND PRODUCTION OF FRUITS

31. The projections of area under apple and all kinds of fruits pooled together as well as the production thereof has been given in Table 11.

TABLE 11—PROJECTIONS OF AREA AND PRODUCTION OF FRUITS

Year	Area in acres		Production in tonnes	
	Apple	All fruits	Apple	All fruits
1973-74	85,641	1,41,050	1,73,060	2,40,590
1974-75	93,641	1,53,050	1,99,060	2,68,920
1978-79	1,25,641	2,01,050	3,10,600	4,04,496
1979-80	1,33,641	2,13,050	3,42,600	4,50,996

32. The Horticulture Department has formulated these projections by fixing up norms for coverage of area and increase in production on a favourably acceptable scale. For example, the department has aimed at increasing the area under all kinds of fruits pooled together by 12,000 acres per annum. Similarly, the production of apple is supposed to increase by 26,000 tonnes by the beginning of Fifth Plan and by 32,000 tonnes per annum after Fifth Plan is over because a couple of factors would contribute to added production because new orchards, planted now, will start giving harvests and also the production will increase due to coverage of more area under orchards.

PLANNING FOR DEVELOPMENT OF HILL TOURISM

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This is the age of jets and jumbo jets and that of the man setting foot on the moon and discovering new horizons. With travel having been revolutionised and modernisation pervading every sphere of living, the tourists today are more demanding. They want at least those facilities which they are used to. All this should provoke a new thinking on the question of promotion of tourism in the country.

IMPORTANT SURVEYS

2. For more than one reason special steps need to be taken for encouraging hill tourism. So far three important surveys have been conducted on tourism in India. Of these, two were by the Stanford Research Institute of America in 1962 and by the Pacific Area Travel Association in 1967 on the attitudes of U.S. visitors to India. The third survey was by the Central Tourism Department itself. The first two surveys gave a rude shock to all Indians by rating this country very low in natural beauty. The third survey by Central Tourism Department explained as to why the foreign visitor carried this impression. It disclosed that hardly 6 or 7 percent of foreign tourists visited all the hill resorts put together and, therefore, they could not see the wealth of natural beauty this country possesses.

VAGARIES OF UNSCRUPULOUS PEOPLE

3. On the other hand, the percentage of visitors from abroad to big cities was very high, it being 56 for Delhi, 53 for Bombay, 35 for Agra, 32 for Calcutta, 21.5 for Madras and less than 10 per cent for other smaller cities. They were thus exposed to the vagaries of customs officials, beggars, big shopkeepers and taxi drivers rather than to the Himalayan mountains with snowy peaks, stately forests, emerald meadows and hospitable people.

4. Now the pattern of tourism to the mountain resorts is changing as a result of the modernisation.

5. Gone are the days when most visitors to the hills came to escape heat of the plains. Now many of them have refrigerators and air-conditioners in their houses and as such they would not come to the mountains as mere escapists. Compared to the summers, many prefer autumn when the rain-washed hills look more enchanting and offer a haze-free view to satisfy the appetite of any camera. The sun then is pleasing and fruit in plenty.

WINTERS—TIME FOR FUN

6. Similarly, people today do not shiver at the thought of going to the mountains during winters. On the contrary, they look forward to a visit to the hill stations during winters and keenly await the news of the first snowfall. It is at this time of the year when the hill stations wearing a snowy mantel look like fairylands.



The church, a landmark of Simla, in its winter glory



Kinner Kailash, symbolising the "home of snows", as Himachal Pradesh literally means

7. They say where there is snow, there is sun. In Europe and cold countries, people throng the hill resorts during winters in search of sun and fun. This trend is quite noticeable in India also now.

8. The popularity that the winter sports like ice-skating and skiing have gained of late is another reason for the increase in tourist traffic to the hills during the winter. These sports are so fascinating and thrilling that these interest not only the part-taker but also the on-looker. The result is that skating on ice has become a craze with the inhabitants of Simla. And the ski slopes of Kufri and Gulmarg are now popular with sport enthusiasts from all parts of the country. In the coming decade, Gulmarg, with the facilities that are being provided there, will bid fare to compete with the western ski resorts. But no one knows the extent to which it will succeed in exploiting the "white gold" which has transformed (so as to say) "over night" the economies of many countries. Himachal Pradesh too has discovered wonderous slopes near Manali where skiing would be possible even in summers. However, the primary question in so far as their development is concerned is going to be that of money that the Centre and the State are ready to invest on it.

THE IMBALANCE

9. The growing traffic to the hills in winter augurs well for the promotion of tourism in these areas. Till now the hill stations suffer from an imbalance—a maddening rush in summer and a total lack of tourist traffic in monsoon and winter. This poses a particular problem of shortage of supply and manpower during the season and lack of demand during the off-season periods. If the new trend continues, the traffic to the mountains will not be seasonal but all the year round in future. This can completely revolutionise the concept of hill tourism in the coming decade. However, it will not be easy to achieve. It will require efforts of great magnitude to prolong the season and cut short the off-season period which has its own rewards.



Poetry in nature



At the ice-skating rink of Simla

10. However, tourist traffic to the hills during summers, has by no means decreased. It has in fact increased as all traffic has, the increase being attributable to middle class home tourists.

11. It is, therefore, this class of visitors and not the Maharajas of the yore who have now to be catered for. This does not, however, mean that the tourist trade can afford to ignore the fastidious visitors from home and abroad.

12. What is it really that lures a visitor to the mountains? More than anything else, it is the calm of the hill stations and beauty of the mountains that attract the present day visitor. They are sick of the busy life, crowds, dust and diesel fumes of the cities. What they primarily seek is the soothing of their nerves, pure air and some food for soul. This they get in the hills where life moves at a leisurely pace, permitting one time to think of the finer things of life.

13. So, while planning for tourism in the hills, one has to jealously guard the tranquillity that the hill resorts afford. More than that it has to be kept in mind that the problem of hill tourism today centres round the preservation of the beauty of nature rather than that of enhancing it. More often than not man has started by "beautifying" a place and has ended up only in destroying its beauty. So the cardinal principle for development in the hills (as for all development) will hold good—the structures that are planned should stand in harmony with the environs and the beauty of nature.

TREKKING AND CLIMBING

14. More and more tourists are now coming to the hills for climbing and high altitude trekking. India has the advantage of offering to the mountaineers a number of Himalayan peaks, the bases of which can be reached without wasting any time. These peaks, some already scaled and others yet posing a challenge, are higher in altitude than most obtained in other countries. Similarly, the valleys in the Himalayas are so wonderfully interwoven that these make India a trekkers' paradise. The youth of the world today love to be engaged in an exciting activity like this. Package tours of youth from home and abroad for hiking, trekking and climbing can, therefore, be organised to the mountains without much difficulty.

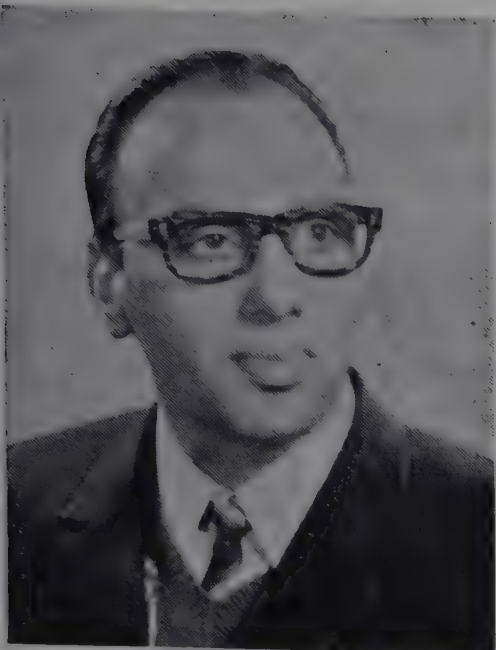
15. In this speed age, time is money. A tourist (particularly a visitor from abroad) wants to "do" places in as short a time as possible. Moreover, for quite a number of people a road journey to the hills takes away the element of pleasure. So unless at least the key mountain resorts are air linked, a foreign tourist is bound to spend his time in big port cities plus an Agra or Ajanta Ellora. The creation of more airports and helipads and the starting of air services to these areas will, therefore, remain a key factor to the development of hill tourism in the near future.

16. By and large roads will continue to be the life-lines of the mountainous States, but road construction in the hills is many times costlier than in the plains. The way road transport is developed that will, to a large extent, determine the growth of tourism in the coming days. Comfortable and readily available coaches plying across the hill resorts at competitive rates can do the trick.

HILL VISITOR NOT FASTIDIOUS

17. A point that should favour rapid development of hill tourism is that a visitor to the hills is normally not fastidious about facilities. It has been seen that the tourists who will not be content with anything less than a five star hotel in metropolitan cities, go to the hill resorts in a spirit of picnic or adventure and are satisfied even with rudimentary amenities.

18. This, however, does not mean that facilities of a high order need not be provided at hill stations. Indeed, the hill resort hotels, by their very nature have to be pretty costly. But such a hotel will be in demand only from a select visitor. The mass of tourism flowing to the hills will continue to comprise the more or less adventurous nature-lovers who care more for the bounties of God than for the luxury of a fabulous hotel. Tourism has to cater to all, including the fastidious among the visitors. This only means that the job of providing facilities at mountain resorts is easier and should be done with a sense of proportion. In that lies the greatest hope for development of tourism in the hills.



NATIONAL/STATE INCOME AND ITS GROWTH IN HIMACHAL PRADESH

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The period after 1930's has witnessed an extraordinary growth in national income estimation and its analysis in all parts of the world. From a rather crude beginning, national income estimating has developed into a fairly advanced analytical tool and planning aid to those engaged in the economic analysis and its measurement. The methods of estimating national income have, in the recent past, been perfected to an extraordinary degree with the aid of greatly enriched statistical data and as a result of the efforts of numberless statisticians employed by official agencies. They have been extended in an ever-increasing number of countries to cover all the three phases of national income viz., (i) its origin in the various industrial divisions, (ii) its distribution to the various factors of production and (iii) its final expenditure or disposition for various types of consumption or investment. These estimates in the form of different aggregates are known as national income at factor cost, national income at market prices, gross national product, personal income and disposable income. All these estimates differ from one another in the degree of their grossness or netness or in their functional or other characteristics. The usefulness of national income estimates as tools for economic analysis has further increased with the development of social accounts and input-output analysis of national production. National income estimates together with the subsidiary social accounts and input-output break downs of the flow of production have come to be used everywhere as the most important instruments for analysing the operations of the national economy and for formulating both short and long-range fiscal and economic policies and programmes.

2. With the spread of national income estimates throughout the world and with the establishment of the United Nations, the Organisation for European Economic Co-operation, and other international political and economic organisations, international comparisons of national income have assumed considerable importance. Annual publication of estimates

by government and with extensive discussion of them in newspapers and journals, the concept of national income has gained wide currency in many countries. Its main substance has come to be reasonably well understood by the laymen even though its specific details may still escape him. It is in fact necessary for every layman to understand the national income estimates, to whatever degree it is possible for him, since he is dependent in numerous ways upon the operations of the national economy. In this background national income theory and analysis have come to occupy a central position in modern economics. Schumpeter¹ aptly called national income analysis the "aggregate analysis". While Frisch² gave it the name "Macroanalysis". Both of them have emphasised that this type of economic analysis deals with large aggregates—total income, total consumer expenditure, total investment, total wages, etc. Hansen³ recognises the development of concepts and data relating to national income as one of the most important achievements of economics in the 20th Century. He also affirms that "concept of national income has become an essential tool for thought and action with respect to economic affairs in the modern world".

BASIC CONCEPT

3. National income is an expression of the current achievements of the national economy in monetary terms. These achievements relate to the production of goods and services within certain geographical boundaries during a specific period, usually a year. Since the national economy is not a "closed" economy but one that exchanges some of its goods and services for those of the other economies, the national product of the period is adjusted for the net balance of income derived from these international exchanges.

4. "If the economic goods comprising the national income are examined in the process of their creation in the various branches of the economy, relative to the services of capital and labour employed in them, then national income measures the *productivity* of the economic system. If, on the other hand, national income is examined in its distribution phase, as a flow of money incomes, from producing units to the participants in production, it appears as a measure of the *equitableness of the existing social and economic order*. Thirdly, if these economic goods are examined in the process of their consumption by the members of society or of their addition to society's capital, then national income appears as a measure of *economic welfare*. An examination of all the three phases of national income—*production distribution and disposition*—is essential for any balanced appraisal of the economy's operations."⁴

1. Joseph A. Schumpeter, *History of Economic Analysis*, New York, 1954, p. 278.

2. Frisch's principal works are the article on "Dynamic Economics" in *Economic Essays in Honour of Gustav Cassell*, London, 1933; and the "Okosirk Systemet" in *Ekonomisk Tidskrift*, 1943, Stockholm.

3. Alvin H. Hansen, *Business Cycles and National Income*.

4. Paul Studenski, *The Income of Nations*. (Part two), p.3.

5. The State economy is also not a 'closed' economy but unlike the country the economic flow to and from the State is not measurable. As such the concept of State Income reduces to State Domestic Product. It is thus the income originating within the State boundaries or the "home produced" income of the State. It does not, therefore, indicate the extent of income accruing to the members of the society residing in the State.

GROWTH OF STATE INCOME OF HIMACHAL PRADESH

6. Estimation of State Income or rather State Domestic Product (S.D.P.) of Himachal Pradesh has been attempted from the year 1950-51 as this Pradesh itself came into existence on 15th April, 1948. This series of S.D.P. has been compiled upto 1965-66 covering the first three Five Year Plans. The S.D.P. has been compiled both at current and 1950-51 prices. In 1966-67, the Pradesh underwent territorial changes with the reorganisation of erstwhile Punjab State, when certain hilly areas of that State were added to Himachal Pradesh. With this change over, a new series of S.D.P. has been developed from 1966-67 at current and 1960-61 prices. The discussion of growth of Pradesh's economy has, therefore, been discussed in two phases in the following paragraphs, the first phase relating to S.D.P. estimates of old Himachal Pradesh upto 1965-66 while the second phase relates to the present larger Himachal Pradesh for the years 1966-67 onwards. The S.D.P. estimates for the year 1966-67 are, however, not good enough to be used for any comparisons because this was the year of territorial change taking place in November, 1966, as a result of which basic data for certain sectors could not be made available for the complete year.

GROWTH DURING 1950-51 TO 1965-66 (OLD HIMACHAL PRADESH)

7. The S.D.P. of old Himachal Pradesh increased from Rs. 26.49 crores in 1950-51 to Rs. 40.20 crores in 1965-66 at constant prices. Thus during this period of 15 years, the S.D.P. recorded an increase of 51.7 per cent. If these end years alone are considered, the average annual compound growth rate works out to 2.8 per cent by using the equation $P_n = P_o (1 + \frac{r}{100})^n$ where 'r' is the growth rate, 'n' the number of years and P_n and P_o are the S.D.P. estimates of the nth and the base years.

8. The annual growth rate worked out by considering estimates pertaining to only two end-years gives a very misleading picture about the average rate of growth. This is because there are wide fluctuations in the income generated from year to year mainly due to variations in agricultural output. In Himachal Pradesh, for instance, the index of agricultural production was 100.0 in 1956-57, increased to 121.8 in 1961-62, declined to 107.8 in 1962-63, again increased to 121.8 in 1964-65 and then declined to 93.7 in 1965-66. The average annual trend growth rates are, therefore, worked out by fitting the following regression line which gives the necessary growth rate:—

$$y = ab^t$$

where 't' is the year, 'y' the S.D.P. and 'a' and 'b' are constant parameters to be determined from the equation.

9. The average annual trend growth rate so worked out is 4.6 per cent in Himachal Pradesh during 1950-51 to 1965-66. The population in the Pradesh has also risen substantially. According to population censuses, the population in Himachal Pradesh rose by 17.9 per cent during 1951 and 1961 and by 21.8 per cent during 1961 and 1971. The growth rate in the economy is, therefore, considerably reduced if measured on a per capita basis. The average growth of per capita income at 1950-51 prices is estimated at 1.8 percent per annum. In specific figures, the per capita income of Himachal Pradesh was Rs. 240 in 1950-51. It rose upto Rs. 281 in 1961-62 which was a bumper crop year, but during 1965-66 it virtually came down to the 1950-51 level because the year 1965-66 was a drought year. In 1964-65, it was, of course Rs. 265.

10. Even though the over-all growth rate in the economy of Himachal Pradesh was as high as 4.6 per cent, the growth rate in the primary production sector was less than even half the over all growth rate. In other sectors, the rate was, however, higher as indicated in the following table:—

TABLE 1—GROWTH RATES IN DIFFERENT SECTORS DURING 1950-51 TO 1965-66

Sector	Percentage growth rate during 1950-51 to 1965-66		
1. Agriculture, animal husbandry, forestry and fisheries	..	..	2.2
2. Mining, large industries and small industries	..	..	5.0
3. Commerce, transport and communications	..	..	6.4
4. Professions, public administration, house property and other services	..	..	10.9
TOTAL SDP	..	..	4.6

11. The following table gives the estimates of S.D.P. and per capita income of old Himachal Pradesh during 1950-51 to 1965-66:—

TABLE 2—ESTIMATES OF STATE DOMESTIC PRODUCT AND PER CAPITA INCOME 1950-51 to 1965-66

Item 1	Unit 2	1950-51 3	1955-56 4	1960-61 5	1964-65 6	1965-66 7
1. State domestic product (State Income):						
(i) At current prices	.. Rs. crores	26.49	30.21	47.81	62.71	65.09
(ii) At 1950-51 prices	.. Rs. crores	26.49	28.39	35.16	41.96	40.20
2. Per capita Income:						
(i) At current prices	.. Rs.	240	258	359	396	389
(ii) At 1950-51 prices	.. Rs.	240	243	264	265	240

1	2	3	4	5	6	7
3. Index number of SDP:						
(i) At current prices	—	100	114	180	237	246
(ii) At 1950-51 prices	—	100	107	133	158	152
4. Index number of per capita income:						
(i) At current prices	—	100	108	150	165	163
(ii) At 1950-51 prices	—	100	101	110	111	100

GROWTH DURING 1966-67 TO 1969-70 (PRESENT HIMACHAL PRADESH)

12. As discussed in para 6, the S.D.P. for 1966-67 has not been used in studying trend growth rate. On the basis of figures of S.D.P. for 1967-68 to 1969-70 at constant 1960-61 prices, the trend growth rate of economy of present Himachal Pradesh works out to 3.3 percent per annum. In terms of per capita income, this rate was 1.3 percent per annum. Sector-wise growth rates of S.D.P. are as given in the following table:—

TABLE 3—GROWTH RATES IN DIFFERENT SECTORS DURING 1967-68 TO 1969-70

Sector	Percentage growth rate during 1967-68 to 1969-70
1	2
1. Agriculture, animal husbandry, forestry, and fisheries ..	2.6
2. Mining, large industries and small industries	4.1
3. Commerce, transport and communications	3.6
4. Professions, public administration, house property and other services	4.9
TOTAL SDP	3.3

13. A comparison of these growth rates with those for the earlier period as discussed in para 10, indicates that the fall in the growth rate of S.D.P. is mainly due to major decline in the growth rate of services sector. On the other hand, the primary production sector has shown a better performance.

14. The following table gives the estimates of S.D.P. and per capita income of present Himachal Pradesh during 1966-67 to 1969-70. For comparison sake, the per capita income estimates at the national level have also been given.

TABLE 4—ESTIMATES OF STATE DOMESTIC PRODUCT AND PER CAPITA INCOME
(1966-67 to 1969-70)

Item	Unit	1966-67	1967-68	1968-69	1969-70
HIMACHAL PRADESH					
1. State domestic product (State Income):					
(i) At current prices..	Rs. crores	137.88	168.76	179.35	187.23
(ii) At 1960-61 prices..	Rs. crores	90.58	100.33	105.44	107.03
2. Per capita income:					
(i) At current prices	Rs.	440	528	550	563
(ii) At 1960-61 prices..	Rs.	289	314	323	322
3. Index number of SDP:					
(i) At current prices ..	—	100	122	130	136
(ii) At 1960-61 prices..	—	100	111	116	118
4. Index number of per capita income :					
(i) At current prices ..	—	100	120	125	128
(ii) At 1960-61 prices	—	100	109	112	111
ALL—INDIA					
5. Per capita income:					
(i) At current prices ..	Rs.	483	561	555	589
(ii) At 1960-61 prices ..	Rs.	308	329	330	339

PROJECTIONS IN GROWTH OF S.D.P. AND PER CAPITA INCOME

15. While working out the growth rate in S.D.P and various sectors with the use of regression line $y=ab^t$, as per figures given in para 12 above, the parameters 'a' and 'b' were determined. By using these parameters, projections upto 1973-74 have also been attempted in the total S.D.P. and the four major sectors on the presumption that the pattern of investment will not undergo any major change upto 1973-74, being the end of Fourth Plan period. These figures are presented in the following table:—

TABLE 5—PROJECTIONS OF STATE DOMESTIC PRODUCT

Sector	Projected domestic product			
	1970-71	1971-72	1972-73	1973-74
1. Agriculture, animal husbandry, forestry and fisheries	66.84	68.34	70.32	72.12
2. Mining, large industries and small industries	9.62	10.03	10.44	10.88
3. Commerce, transport and communications	10.72	11.10	11.48	11.91
4. Professions, public administration, house property and other services	24.30	25.49	26.73	28.04
TOTAL SDP	111.48	114.96	118.97	122.95

16. Using these figures of projected S.D.P., the value of per capita income can be calculated by using suitably projected population data.

TABLE 6—PROJECTIONS OF PER CAPITA INCOME

Item		1970-71	1971-72	1972-73	1973-74
1	SDP (Rs. crores)	111.48	114.96	118.97	122.95
2.	Per capita income by dividing the SDP at (1) above with population suitably projected (Rs.) ..	326	329	333	337

UTILITY OF STATE INCOME ESTIMATES

17. National income estimates are indispensable tools for planning and economic policy formulation at the national level, but utility of the State Income estimates for planning and economic policy at the State level is considerably reduced because of the inadequate control of the State on various sectors of the economy and the role of the State Government which is confined to formulation of the schemes of the public sector outlay of the State. Planning of balances between aggregate and sector plans is not done at the State level. The macro-economic projections of State income, savings, exports, imports or requisite production of commodities are not attempted by the State Governments. The projections made by the Planning Commission are also for the national level only and their break down according to States is not attempted.

18. The interest in State income is mainly centered at present as measure of economic development of the State over time or in comparison to other States. For measuring the disparities in income of the States, Working Group appointed by the Planning Commission for identification of backward areas has also recommended per capita income of a State as one of the criteria for identification of backward areas. The States are administrative regions and not necessarily homogeneous economic regions. Therefore, there would be imbalances in the economic development of various areas within the State also. The Planning Commission has also suggested to the State Governments that while formulating plans for the State, they should identify imbalances in the economic development of the various regions of the State and make special provisions for minimising the imbalances. The State Governments are, therefore, interested in incomes of regions below the State level, for formulation of plans of the State. There have been suggestions for preparing district income estimates and attempts have been made for preparing such estimates. The Committee on Dispersal of Industries has recommended per capita income of a district as an indicator for classification of industrially backward districts. The Planning Commission has accepted a district as the unit for local planning. The demand for estimates of income of areas below the State level, for identification of imbalances in the economic development will increase. But, preparation of income estimates for areas below the State level, would involve more complex problems than those confronted while preparing State income estimates. Looking to the need of the State Governments,

the problems of preparing income estimates below the State level and non-availability of reasonably accurate State income estimates, the development of consumer expenditure series needs consideration as an alternate indicator of income discussed in the following paragraph.

CONSUMER EXPENDITURE : AN ALTERNATE TO STATE INCOME

19. Importance of developing the consumer expenditure series for State levels has also been advocated before, but⁵ it seems that consumer expenditure has not yet received the attention and importance it deserves. The presently available estimates of consumer expenditure for State level are not satisfactory as the estimates at State level have large error element and are not useful for inter-State comparison. The advantages of having better estimates of consumer expenditure over the State income estimates at present are:—

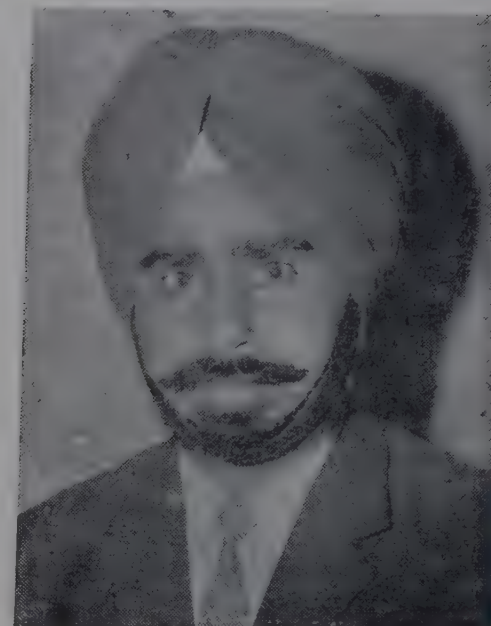
- (i) It is not possible to have satisfactory State income estimates at present, which would permit inter-State comparison of disparities in income. Reasonably accurate estimates of consumer expenditure can be prepared for the States and can be used in place of State income estimates.
- (ii) It may not be possible to prepare useful income estimates for districts or any area below the State level. The consumer expenditure estimates can be prepared for any area. The consumer expenditure estimates for areas below State level would be useful for identification of imbalances in the economic development of various areas in the State.
- (iii) As a measure of welfare (which is closely related with the economic development of the State) of the people of the State, per capita consumer expenditure is a more relevant indicator than the per capita income (originating basis). With quantitative estimates of consumption of various commodities, the utility of consumer expenditure could be enhanced since it would facilitate comparisons of levels of expenditure after elimination of price differentials among States.
- (iv) The major portion of tax revenues of the States comes from Sales Tax and estimates of consumer expenditure with detailed break down of expenditure on various items would be more useful to the State Governments for taxation policies and forecasting tax receipts.
- (v) The need for developing the series of personal income by States needs no emphasis. But the computation of this ideal series is not possible at present since it requires data on inter-State transfers which are not available. In the absence of this series, consumer expenditure series could be considered as a series nearer to it. Moreover receipts from direct taxes like income-tax and land revenue are available according to States. The estimate of consumer expenditure along-with the receipts from direct taxes would give a closer series to the personal income series. In spite of several limitations this series may prove useful in the absence of personal income estimates by States.

5. 'Certain problems concerning estimation of income, output and expenditure aggregates as well as preparation of social accounts at a regional level',—B.Dey, M. Mukherjee and B.Roy.

INDO-GERMAN AGRICULTURAL DEVELOPMENT PROJECT



—A. R. Chauhan,
*Project Officer, I.A.D.P.,
Mandi.*



—Gian Singh,
*District Agriculture Officer,
Mandi.*

The abundance mainly of foodgrains, fodder, fruits, fat and fibre are basic prerequisites which go to make a strong, prosperous and self-reliant nation. For a developing country like India, where 80% of the population which is all ruralized is directly or indirectly dependent on agriculture, it is imperative that such a plan is envisaged in which all potentials of rural economy are developed in such a sequence that no aspect of rural life remains unexplored by the deft hand of the planner. Started in the early 1963, the Indo-German Agricultural Project which aimed at integrated agricultural or rural development answers to this need and has given us a new vision, fore-sight and a clear path to tread. The programme has been a complete success in bringing about a total transformation of the lot of farming community and would be directly relevant only to the hill districts with similar agro-physical and agro-climatic conditions but many of the conclusions would be applicable *mutatis mutandis* to other parts of the country too.

MAP OF MANDI DIST. SHOWING THE ACTIVITIES OF PACKAGE PROGRAMME.



2. Before we go into the genesis, objectives and strategy adopted in this project, a glimpse of the achievements of the project is as follows:—

TABLE 1—IMPORTANT ACHIEVEMENTS

Items	1962-63	1970-71
(i) <i>Yield of important crops (quintals per hectare)</i>		
Wheat	7.00	12.10
Maize	14.20	24.40
Rice	6.50	13.70
(ii) <i>Fertilizer consumption (tonnes)</i>	250	6,339
(iii) <i>Horticulture</i>		
Area (acres)	1,273	15,271
Production (tonnes)	933	35,000
(iv) <i>Co-operatives</i>		
Societies (nos.)	185	219
Membership (nos.)	17,301	58,659
Loans advanced (Rs. lakhs)	2.95	17.81
Recoveries (Rs. lakhs)	2.50	14.83
(v) <i>Animal Husbandry</i>		
Distribution of poultry birds	—	15,601
Artificial insemination	—	2,098
(over 300 calves of F ₁ generation are now available with the farmers)		
(vi) <i>Dairy</i>		
Milk handled (litres)	—	12,81,000
Loans advanced for purchase of dairy cattle (Rs. lakhs)	—	3.82

3. These are but a few indications of rise in production levels achieved in this district in a short span of eight years. Compared to other neighbouring areas, the progress has been phenomenal.

GENESIS

4. The origin of this project can be traced to a proposal by the Government of Federal Republic of Germany offering technical and financial aid for taking up an integrated agricultural development programme in one or two districts on a pattern similar to the one approved by the Government of India for seven districts taken up with Ford Foundation assistance (I.A.D.P. Districts). A team of German Experts visited some parts of the country and finally indicated their preference for taking up Mandi District in Himachal Pradesh and indicated emphatically that Mandi, a sub-mountainous region, would need a pattern of integrated agricultural development programme (mixed farming) which would be in many aspects different from usual package programme. The considerations which led to the identification of Mandi District included the following:—

- (i) The climatic conditions and terrain of Mandi District was some what similar to those existing in parts of West Germany and the German Agricultural Experts felt that their knowledge and experience could be best utilized for intensive development work in this district.
- (ii) Mandi District offered a great scope for developing a pattern of intensive mixed



*Improved variety
of wheat*



*Hybrid maize
dominates the
Mandi fields*

farming where the emphasis would be on a balanced development of animal husbandry, horticulture, and crop production. This was in contrast to the emphasis placed on package programme districts in increased production of foodgrains alone.

- (iii) By and large, the land holdings are very small. Only 0.2 per cent farming families have more than 8 hectares, whereas, a larger percentage (46.6) is of the farmers having one hectare holding. As many as 29.5% and 18.6% fall in the range of 1—2 and 2—4 hectares, respectively. Only 5.1% farmers have reasonable size of holding i.e., 4—8 hectares. As such for providing *gainful whole time* employment, the answer lies in intensive mixed farming.

5. It was stipulated that a team of German experts in different agricultural subjects such as farm planning, agricultural engineering, soil conservation and water management, fruit and vegetable cultivation, plant protection and animal breeding, together with a strengthened team from Indian side comprising not merely of the usual district, block and field staff, but also with a provision of counterpart functionaries to the German experts would be necessary. The scheme was supposed to cost Rs. 77.86 lakhs over a period of five years out of which the Government of West Germany was to provide materials and equipments worth approximately Rs. 30 lakhs (experience has shown that these were gross under-estimates of the actual requirements and the actual inflow in the first five years itself exceeded Rs. 60 lakhs from Germany, besides means of agricultural production on rupee payment basis). The equipment which was to come from Germany included a mobile workshop, vehicles of various types, agricultural machinery and implements for demonstration and training purposes, efficient means of production like seeds, fertilizers, plant protection materials and breeding animals, building equipments like soil testing laboratory and plant protection centres and mobile installations for demonstration in the field of animal breeding including artificial insemination, fruit and vegetable growing and for rural water management.

6. This scheme was launched with the concurrence of the Planning Commission, Ministry of Finance and the Ministry of Home Affairs. The agreement was concluded on the 14th May, 1962 and the activities actually taken up in early 1963.

OBJECTIVES

7. Broadly speaking, the objectives of the project are the following:—

- (i) To achieve a rapid rise in the level of agricultural production.
- (ii) To diversify the cropping pattern so as to include production of cash crops.
- (iii) To encourage a pattern of mixed farming which would be more remunerative to the farmers and at the same time increase the supply of protein food for the population.

8. Thus the objectives of the programme are some what different from the usual package programme. These aim at assisting the farmers in adopting a combination of known improved practices and by providing them simultaneously with all the wherewithalls of production such as supplies and credit. The preparation of production plans for individual

farming families was the *modus operandi* of quickly reaching all the farmers and calculating the credit and input requirements.

THE STRATEGY

9. The following strategy was adopted:—

- (i) enliven the extension machinery and win the confidence of the farmers;
- (ii) identify the technology suited to the area;
- (iii) provide necessary infra-structural support to facilitate critical testing of the proposed technology under local conditions; and
- (iv) provide necessary institutional support to make the adoption of new technology possible.

10. In order to win the confidence of the farmers, the project decided to concentrate on safest way to increase agricultural production under existing conditions. It was felt that for some time, they should concentrate on the proper use of the chemical fertilizers. Consequently, a large number of demonstration plots were laid—one or more in every village. Gradually the focus was shifted to improved seeds of crop varieties of maize, paddy and wheat, better tilling implements and new practices. Only thereafter, the introduction of cash crops was attempted.

11. But equally important was the ground work which preceded all this. These included the identification of proper technology, creation and strengthening of institutional and infrastructural base and hectic testing of known technology on seed farms, progeny orchards, animal farms and agricultural workshop. In other words, a multiplicity of instruments were simultaneously used.



Long, uniform and well-filled cobs

12. The first instrument included the strengthening of extension organisation at all levels, from village to the district, to bring the knowledge of modern agricultural technology to the farmers and to train the extension workers and farmers.

13. The second instrument included the creation of institutions for adaptive research in modern agriculture. The research and testing centres, animal breeding farms, seed farms, progeny orchards and nurseries were all utilized to subserve this end. Research in soil and water management to evolve suitable recommendations was also taken up. Soil testing laboratory and agricultural workshop were set up in addition to reshaping of already existing seed farms and progeny orchards.

14. The third instrument included the establishment of co-operatives and other agencies for supply and storage of fertilizers, seeds, plant protection materials, agricultural machinery and implements, besides rural credit. Arrangements for marketing and processing of agricultural produce were also thought of.

15. The fourth one included the streamlining of administration and management at the district/project level, establishment of clear chain of command for quick action, arrangement for co-ordination between various agencies and delegation of powers, simplification of procedures and arrangements for the supervision and control of supply and servicing agencies, etc.

16. It is for the first time that such a multiplicity of instruments were deployed in the implementation of agricultural development project in Mandi district.

17. In the adoption of suitable technology, due attention was given to the ecological character of the various zones in the district. For example in the plains and valleys, attention was devoted to production of food crops, in the low hills live-stock production was given more importance and the mid and higher hills were considered suitable for growing high value horticultural and vegetable crops for sale and for production of seeds and seedlings.

18. As mentioned earlier, careful attention had also to be given for deciding the basic inputs which are so essential to increased production and on which the efforts of the extension service should focus. It was decided that a proper use of fertilizer should have precedence. Extensive practical field demonstrations on the effect of fertilizer on common local crop varieties were initiated on farmer's fields and almost every village had its demonstration plot. Even with the genetic limitations of the then existing improved varieties, the impact of the increased fertilizer consumption on agricultural production was quite spectacular from the initial stage. Fortunately, this limitation was removed with the introduction of high yielding varieties of wheat, paddy and hybrids of maize. The Mandi farmers took full benefit of these technological developments with the result that except for the drought years 1965-67, the overall production of foodgrains as well as yields per acre of wheat and maize



Cross-bred animals



*Dwarf apple
plantation at
Bajwara*

have recorded spectacular increase. It is often said that the green revolution in India has not benefitted all parts of the country in equal measure and its impact is strikingly greater in the plains of Punjab, Haryana, Uttar Pradesh and some areas in the south. But it is a matter of satisfaction that backward hilly area like Mandi has undergone the same sort of transformation as the more progressive areas of Punjab and Haryana. It is doubtful if the farmers of any other hilly region have shown similar responsiveness to intensive agricultural production efforts.

NEW INSTITUTIONS

19. Under the Mandi Project, considerable progress has been made in increasing crop yields, production of fruits and vegetable and vegetable seed crops, introduction of cross-bred animals and increase in milk production, popularization of improved agricultural implements, introduction of techniques of soil and water management, increase in irrigation potential and above all in the diversification of the farm economy. But what is of greater importance is the establishment of suitable institutions for achieving a sustained growth of agricultural economy over the long term period. This institutionalization is of paramount importance from the view point of economic development of the area. The existence of these institutional facilities has ensured that even after the termination of the joint collaboration agreement the various activities will continue to move through the momentum created by these institutions.

20. Some of the highlights of the institutional changes have been discussed in the following paragraphs.

21. The extension organisation at district, block and village levels has been considerably strengthened. At the district level, there is a team of subject matter specialists in crop production, plant protection, soil conservation and water management, horticulture, agricultural engineering, animal husbandry, dairy farm management and co-operatives, etc. This team works under the guidance of Project Officer. At the block level also there are extension officers in agriculture, animal husbandry, co-operatives, horticulture, irrigation, etc. At the village level the number of village level workers has been doubled. Another important feature of the organisation at the district level is the constitution of Project Management Committee with the Deputy Commissioner as Chairman and the Project Officer and the Leader of the German Team as its members. The Committee takes decision on all important policy matters. A district level co-ordination committee presided by the Deputy Commissioner has also been set up to ensure co-ordination of the district level officers from the various departments. The close association of the Deputy Commissioner, with the execution of the Project has been found to be very effective in ensuring prompt decisions and good co-ordination. However, at the same time adequate powers have been delegated to the Project Officer both financial and administrative to exercise control over all participating agencies. With the delegation of these powers, a clear chain of command has been established in the official hierarchy of the district.

ESTABLISHMENT OF AGRICULTURAL WORKSHOP

22. An agricultural workshop has been established at Bhangrotu having facilities for designing and testing of improved agricultural implements. The workshop also attends to the repairs and servicing of all types of machinery. Some of the important implements developed by this workshop are furrow turning-plough, pegtooth harrow, potato digger, potato ridger and a number of hand tools. The workshop has a good contingent of technical staff for designing and testing as well as for production of improved implements, machinery and steel trusses for construction.

SOIL TESTING CENTRE

23. One soil testing laboratory has been established at Sundernagar. The present capacity of the laboratory is to analyse 6,000 samples annually. On the basis of the samples analysed, soil fertility map for the district has been prepared which helps in determining the nature of soil and fertilizer requirements for raising different crops. The utility of such work will assume greater importance with the greater sophistication of agricultural technology.

POULTRY FARM

24. The main poultry farm having 3 sub-units has been established at Sundernagar where improved breeds such as white Leghorn and Rhod Island Red are reared and multiplied for distribution amongst the farmers. The manufacture of poultry feed has also been taken up, both under public and co-operative sectors.

SHEEP BREEDING FARM

25. Sheep breeding farm has been established at Nagwain with a view to multiply the breeding stock and distribute it amongst the farmers. At present the number of these animals is small. It is proposed to import at least 100 additional ewes and 10 rams of German Land Marino breed for propagation at the farm and further distribution of male progeny to the sheep breeders.

MILK CHILLING CENTRES

26. Five milk chilling centres each of 2,000 litre capacity have been established in the milk shed areas of the district. The milk is collected through rural co-operatives and chilled at these centres for bringing to the main dairy plant.

DAIRY PLANT

27. A complete dairy plant with sophisticated equipment imported from Germany has been installed at Chakkar. It can process 10,000 litres milk per shift. In addition to pasturization of milk, a number of milk products are also prepared.

FERTILIZER SHEDS

28. To meet the increased demand of chemical fertilizers timely, a chain of fertilizer godowns have been constructed in the potential area. At present there are 7 godowns with a capacity of 1,000 tonnes each and 3 godowns with a capacity of 300 tonnes each. There is another proposal for the construction of 3 big godowns and 10 small godowns. In addition, 10 transit sheds of 30—40 tonnes capacity will be constructed at the road ends for feeding interior and remote areas.

ADAPTIVE RESEARCH TRIALS

29. The work of adaptive research for various crops including vegetable and horticultural crops is being done at the Agricultural Farm at Bhangrotu and also at various seed farms, potato development stations, progeny orchards, and nurseries established throughout the district. On these farms, trials have been conducted on off-season vegetables like tomato, cabbage, cauliflower, peas and capsicum. Production of seeds of asiatic and temperate type of vegetables has also been undertaken. In the areas at lower altitude, potato crop for table purposes and maize plus cowpeas for fodder purposes have been adjusted in the cropping pattern and at higher altitude the disease-free potato and other vegetables are produced for seed purposes and exported to plain areas.

SOIL CONSERVATION AND WATER MANAGEMENT

30. Under the project, the soil conservation organisation has been considerably strengthened. It has been supplied with units of bulldozers, tractors for levelling and terracing work and trucks with tipping arrangement for construction work. A number of drilling rigs have also been supplied for digging wells.

TRAINING OF EXTENSION WORKERS AND FARMERS

31. The Farmers' Training Centre, at Sundernagar is looking after the work of farmers' training in Mandi District. The centre is doing very good service to the farming community and the extension workers through frequent training camps and refresher courses.

COMMUNITY CENTRE

32. A Community Centre has been established at Sundernagar. There is a provision of large-sized and well-furnished auditorium, library, reading rooms, recreation rooms separately for ladies and children and a rest house. It will be further equipped with agricultural museum. The centre serves as a place of learning for extension workers and progressive farmers.

STRENGTHENING OF CO-OPERATIVE INSTITUTIONS

33. The supply of all agricultural inputs like fertilizers, seeds, plant protection materials and equipments is being channelized through the co-operative societies. These societies have covered 80% of the rural population. One of the weaker links in this organisation is inadequate linking between credit/supplies and marketing. For earning cash, fruits, vegetables and milk have found place of pride in the pattern of agricultural production. The co-operative societies are playing an important role in collecting milk and disposing it off profitably. Potato, vegetables and surplus foodgrains have yet to get a fair deal through cooperative marketing.

34. With the creation of infrastructure, the introduction of new technology and with the increasing market orientation of production, it is felt that full benefits of a diversified agricultural economy will be realized. In the second stage of development, greater attention will have to be given to improvement of the potentials of the local livestock by a large scale cross-breeding programme, improvement of fodder resources by introduction of fodder crops in the normal rotation, implementation of programme of irrigation and drainage on a large scale, establishment of processing facilities for absorbing larger quantities of fruits and strengthening of marketing and processing organisation.

COUNTERPART FUNDS

35. It was soon realized by the project that the strengthening of infrastructural facilities was an urgent necessity. For instance the programme of fertilizer distribution in the interior areas could not make progress for want of storage sheds, the scheme of collection of milk could not proceed for want of a net work of milk collection and chilling centres. Soon after launching of the project, it was realized that the achievements of the project may not turn out to be spectacular as was originally expected because of this constraint. This was got over by West Germany by supplying agricultural means of production on rupee payment basis. For instance, the supply of 1,000 tonnes of fertilizer by West Germany meant accrual of funds to the tune of rupees six lakhs. The Government of West Germany gifted all means of agricultural production (fertilizer, seeds, plant protection, material, garden hand tools, pesticides, one-axel tractors, breeding bulls, cows, sheeps and poultry birds and eggs for hatching) with the condition that these will be sold on no-profit and no-loss basis to the farmers of Mandi district and the sale proceeds should be utilized for building up infrastructure within the project area. Thus, the project was benefited in a two-fold fashion. Firstly, it had ready availability of means of production and the countrywide scarcity especially of fertilizers did not create problems and secondly, the sale proceeds of means of production could be utilized for building up the infrastructure. In the district 10 fertilizer godowns, one fruit processing building, one main dairy plant, five milk chilling centres, one big modern poultry farm building and a number of irrigation, drainage, soil conservation and other projects have been constructed out of counterpart funds. Some transport vehicles were also

urchased. In all, funds to the tune of Rs. 55 lakhs were generated out of which funds worth about Rs. 54 lakhs have been utilized. This easy availability of funds with the project committee unfettered by the procedural formalities was a new feature in this project which helped in making the achievements more spectacular and transformation of the lot of the peasants of Mandi.

GERMAN COLLABORATION PAID RICH DIVIDENDS TO MANDI FARMERS

36. Like other farmers of the country, Mandi farmer is also not an exception to the inherited orthodoxy and rigidity. But at the same time generation of young farmers is more receptive for the modern techniques of agriculture. The impact of intensive agriculture drive launched in Mandi District and impressive results shown by high yielding varieties has created a sense of reliance in the mind of younger generation of farmers, who have started adopting the modern agriculture stage by stage. Before we summarize, it will be interesting to make a mention of a few cultivators who managed to get rid of the demon of poverty in this project.

SHRI BHAGAT RAM

37. Bhagat Ram, 26 years old farmer, typifies the new generation of progressive farmers which has whole heartedly taken to modern practices and literally reaped a rich harvest. His 25 bighas farm in village Chakkar, four miles from Mandi was once a losing proposition. His old father was too steeped in tradition even to think of getting better returns from his land. The negligible yield was just enough to keep the family away from starvation. Bhagat Ram had to look for a petty job to supplement the income of the family with the additional responsibility of supporting a wife and two infants. He sought a peon's job but failed and then he did a stint as a mechanic with the Beas-Sutlej Link Project. It was his meeting with an extension official of the Indo-German Agricultural Project that changed the life not only of Bhagat Ram but scores of other farmers in the neighbourhood. For the first time in 1969, he sowed the high yielding variety of R.R. 21 wheat. From the multipurpose co-operative society of his area, he bought on credit seeds and fertilizers worth Rs. 1,600. A borrowed ox from his uncle finally launched him on the road to prosperity and in the very first harvest he gathered 108 quintals of wheat—an achievement much beyond his expectations. He is now truly a progressive farmer and is keen to take advantage of every new technique. Bhagat Ram has given a new look to his family house, his newly acquired household effects include a radio, a sewing machine, an electric iron and pair of *neewar* beds. His two children now proudly ride a tricycle. He has also bought two bullocks, a buffalo and a German Indian cross-bred cow. A tractor is high on the list of items he would like to buy.

SHRI GANGA RAM

38. Another farmer who has done extremely well by adopting the latest agricultural techniques is Ganga Ram of village Dhondi, on Mandi-Sundernagar Road. He started growing

high yielding varieties only in 1968 and reaped an average wheat yield of 40 mds. per acre. Recently Ganga Ram added to his holding by purchasing additional land worth Rs. 4,000.

SHRI DHANI RAM

39. Dhani Ram, a young farmer 32 years old of Odihar village from Lamba Thack circle in Seraj Block has 13 bighas of land, which lies at an elevation of about 7,000 feet above the sea level. It was of no avail to him as it could not help the family to make its both ends meet. He had to go out in winter season for earning his livelihood.

40. In a discussion with an extension worker, he had agreed to sow one kilogram of R.R. 21 wheat seed with all the package of practices. This one kilogram wheat seed has paved the way for his prosperity. He harvested 96 kilograms of crop. In the following season he applied his practical knowledge to all his 12 bighas of cultivated land which produced 92 maunds of wheat which was really a wonder in the area. He set an example to his traditional minded old farmers in his neighbourhood who have also started the adoption of the new methods of cultivation.

41. Dhani Ram has constructed a new house in the following years and now he has added 10 bighas more land to his farm. His newly constructed house includes a sewing machine, a radio set, a pocket transistor and drawing room table with sufficient crockery to serve his guests nicely. Besides this after acquiring self sufficiency for his family necessities, he could arrange to spare land for planting about 65 apple plants. These plants after attaining the full growth will open a new chapter in his family history.

SHRI DEVI DASS

42. Shri Devi Dass, a farmer from Pali, of Drang Block is yet another example of developing farm economy in V.L.W. circle, Pali.

43. Devi Dass, a 36 year old farmer with his 35 bighas of cultivated land was earning his income from stitching the clothes of his fellow farmers with quite insufficient yields of food-grains from his holding even to meet his family requirements.

44. The young farmer was convinced for laying out a demonstration plot with Hybrid Maize HIM 123 in the year 1968. After a lot of hesitation, he was ready to lay out the demonstration in 25 bighas of his land with full package of practices. He was supplied with a small subsidy of 100 kilograms of German fertilizer 15:15:15 and rest of the 200 kilograms of fertilizer 100 kilogram CAN and 100 kilograms of German Mixture 15:15:15 was purchased by him. There was a great risk involved but due to strenuous efforts and regular supervision of the demonstration by the extension staff and concerned district level extension staff, the plot came to the expectations and Shri Devi Dass harvested 70 maunds of maize grains per acre.

and he was facing a problem to store this 350 maunds of maize. It was an eye opener for the farmers and he applied all the technical know-how imparted by the extension official in the coming *rabi* season, for which he had to purchase 200 kilograms of wheat R.R. 21 seed at the rate of Rs. 3 per kilogram and was convinced with the results that this is the better way of investing money. The *rabi* season also proved a boon to him and he harvested 255 maunds of wheat. His neighbours still using the old methods of farming were astonished to see the great change in the surrounding fields of Shri Devi Dass.

45. Shri Devi Dass has started feeling to adopt the mixed farming on the lines as explained to him during the different organized training camps. He planted a plum orchard in about 6 bighas of his land. He has constructed a small tank for irrigating his vegetables being grown on commercial basis.

46. His new addition to his assets is a new 10 bighas plot of land, a very good pair of bullocks, a small irrigation tank to irrigate 10 bighas of vegetable growing plots. Four buffaloes yielding 30—40 litres of milk daily. Besides this he added two new sets of two rooms each in his old inherited house, a very good radio set, a new sewing machine with paddles, a set of improved agricultural implements, a chaff-cutter and now he is proposing to purchase a wheat thresher and maize sheller.

CONCLUSIONS

47. In conclusion, it will be useful to recapitulate the strategy adopted for integrated development of Mandi District.

- (1) The major constraints to development in the area were identified.
- (2) Necessary institutional support was created to overcome these constraints. This concluded:—
 - (i) Creating and maintaining a live and efficient extension organisation.
 - (ii) Identifying the technology specifically suited to the area through adaptive trials and creating necessary facilities to do so.
 - (iii) Effectively communicating the technology to the farmers through demonstrations, sight-seeing tours and training camps.
 - (iv) Upgrading the skills of the farming population through training programmes.
 - (v) Providing the necessary inputs including credit to enable the adoption of the technology possible.
- (3) The extension strategy for extension functionaries was evolved only in stages with use of fertilizer taking the precedence.
- (4) The administrative structure and the horizontal and vertical levels of co-ordination were defined precisely and initiative and good work was rewarded.
- (5) Infrastructural support of a critical nature was created as and when needed out of a special fund by the Project Level Committee.

48. The most important thing is to have proper and affectionate leadership at the district level and to delegate sufficient powers to the Project and not to force them to indiscriminately adopt the set pattern, formalities and policies determined either at the State or Central level.

49. Through all this, there has been a phenomenal rise in the production levels, achieved in the district in respect of foodgrains, fruits and off-season vegetables, seed potato and seeds of asiatic and temperate type of vegetables and above all the milk production which have revolutionized the economy of the farming community of Mandi district. In fact, Mandi district has achieved green revolution and is now also witnessing the white revolution.



EMPLOYMENT TRENDS IN HIMACHAL PRADESH

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Development is a continuous process of utilising more and more effectively the resources of the community in furtherance of accepted ends by creating dents on as many places as possible in the vicious circle of poverty i.e., lesser gross national product, lesser proportion of the current income of the community devoted to capital formation, lesser utilisation of the available factors of production, lesser national income for distribution. On attaining freedom it was, therefore, rightly decided that the abundantly available manpower may be capitalised for the eradication of rampant abject poverty in the country. The constitution makers, therefore, included "a right to work" for its people in the directive principles for the State in the Constitution of the Indian Republic. Thus, full employment for all the able bodied has become the very basis of our State. Perhaps, this is in the fulfilment of this directive that as a first step towards "Garibi Hatao" the Central Government besides the removal of inequalities of wealth has taken upon itself the gigantic and difficult task of providing full employment for all those who seek work. In this context, the need for an objective assessment of the employment trends in any area so as to bring to focus the salient basic social and economic features for the achievement of the goal of full employment and suggesting directions in which corrective administrative action could be taken can hardly be over-emphasised. For this purpose, an attempt has been made in the subsequent paragraphs to discuss socio-economic conditions having a bearing on employment in Himachal Pradesh.

2. For India the latest data on occupational distribution are those compiled for the 1971 Census. For changes in inter-censal years, only rough guesses are possible and it must be admitted that it is virtually impossible to detect in the short run if the occupational structure has started changing significantly. Whatever changes take place as a result of the development plans are off-set by the large increment in the population. But, in view of the sparse population in Himachal Pradesh i.e. 34.60 lakh persons according to 1971 Census

and lower decennial population growth as compared to all India average, the problem is not as acute as in India as a whole as given in the following table:—

TABLE 1—DECENNIAL POPULATION GROWTH RATES

Years	Population growth rate in	
	India	Himachal Pradesh
1901—11	5.73	—1.22
1911—21	—0.30	1.65
1921—31	11.00	5.23
1931—41	14.23	11.54
1941—51	13.31	5.42
1951—61	21.64	17.87
1961—71	24.80	23.04

3. In India, the objectives of policy from the long-term point of view have been to keep to the minimum further increases in the working force in agriculture. In this sector, it is being endeavoured that production and incomes rise through greater productivity rather than on increasing employment in terms of numbers. In fact, after a period, as in agriculture and allied pursuits the net output per worker is at present barely 1/5th of that in mining and factory establishments and 1/3rd of that in the trade and services sector, there should be a fall even in absolute numbers on the land. But, in spite of all this, there has not been any marked change in the occupational pattern in India in general and Himachal Pradesh in particular over the last three or four decades. Broadly speaking, in India agriculture and allied pursuits continue to absorb about 70 per cent of the working force, mining and factory industry absorb about 2.6 per cent of the working force, small enterprises including construction take up some 8 per cent, about 7 per cent of the working force is engaged in transport, communications and trade; public administration, professions and liberal arts and domestic services account for 10 per cent.

4. In view of a very high percentage of rural population, occupational distribution of the people in Himachal Pradesh is markedly different from that of the all-India average as given in the following table:—

TABLE 2—CLASSIFICATION OF WORKERS IN HIMACHAL PRADESH, 1971

Classification of occupation	Percentage in	
	Himachal Pradesh	All India
(i) Cultivators	71.60	42.87
(ii) Agricultural labourers	4.25	25.76
(iii) Other workers	24.15	31.37

5. Thus, about 76 per cent of the working force is absorbed in agriculture and allied pursuits in Himachal Pradesh. This means that the secondary and tertiary sectors have not grown in this Pradesh rapidly enough to make an impact on the primary sector. Nor has the primary sector itself thrown up surpluses which would create conditions favourable for expansion elsewhere.

6. Agriculture, although the mainstay of the people is not a commercial proposition but has become a way of life in Himachal Pradesh. In spite of the fact that agriculture provides employment to almost all the working force in the rural areas, it does not yield full employment during whole of the year in view of the small terraced holdings, primitive methods of cultivation and vagaries of nature. Therefore, the problem is more of under-employment than of unemployment. No study has so far been conducted in the Pradesh to measure the magnitude and the main periods of under-employment. But, on the basis of experience it can be said that the farmers generally remain under-employed during the rainy season and winter snowfalls. However, with long periods of under-employment in agricultural pursuits and consequent low incomes and the best efforts that can be made by the planners, some increases in the working force in agriculture may be unavoidable for some years to come. Similarly, there is little scope for increasing the working force or the quantum of mandays in traditional small scale industries, which are already burdened with excessive numbers.

7. The bulk of the new employment opportunities have, therefore, to be found in mining and in modern industry large as well as small scale, in construction and in tertiary occupations. In Himachal Pradesh, in view of difficult hilly terrain, lack of required infrastructure and industrial inertia hampering the improvements in equipment, techniques and organisation, much headway has not been possible to be made in the development of this sector. As a result, while about 3 per cent of the working force is absorbed by factory industry in India as a whole, only 0.3 per cent of the population was engaged in registered factories in Himachal Pradesh at the end of the year 1970. The following table gives the percentage of mid-year population employed in the registered factories in the Pradesh during the last ten years:—

TABLE 3—FACTORY EMPLOYMENT AS PERCENTAGE OF TOTAL POPULATION

Year	Percentage of mid-year population employed in registered factories					
1	2					
1960	..	..	..	..	..	0.14
1961	..	..	..	..	..	0.16
1962	..	..	..	..	..	0.16
1963	..	..	..	..	..	0.16
1964	..	..	..	..	..	0.15

1						2
1965	..	..	..	..	..	0.22
1966	..	..	..	..	..	0.16
1967	..	..	..	..	..	0.22
1968	..	..	..	..	..	0.24
1969	..	..	..	..	..	0.28
1970	..	..	..	..	..	0.32

8. It would be observed that the percentage of population absorbed by the factory industry sector has increased from 0.14 per cent in 1960 to 0.32 per cent in 1970. For Himachal Pradesh, no estimates of the employment in the unorganised small enterprises sector are available. An idea in this regard may, however, be formed in view of the fact that small enterprises including construction take up some 8 per cent of the working force in India as a whole.

9. From the standpoint of Himachal Pradesh, public administration forms an important source of employment in the Pradesh and 4.53 per cent of the population was employed in central and state government offices including those in the local bodies in 1970. The following table gives the quantum of employment in this sector for the last 4 years:—

TABLE 4—EMPLOYMENT IN PUBLIC ADMINISTRATION SECTOR

Category				No. of employees in March			
				1969	1970	1971	1972
1. Central Government	..	..	..	26,486	31,626	34,374	40,987
2. State Government*	..	..	..	1,16,942	1,12,557	1,30,929	1,53,412
3. Quasi-Government	..	..	..	3,156	3,385	3,583	11,366
4. Local bodies	..	..	..	4,669	4,455	4,555	4,600

*including daily-paid work-charged and contingency-paid employees.

10. Thus, the public administration sector absorbed 6.02 per cent of the mid-year population in 1972. It would be observed that the employees of the State Government formed the largest source of employment in the public administration sector, and absorbed 2.94 percent of the mid-year population in 1960. This percentage has since been increasing and stood at 3.53 per cent in March, 1970.

11. It may be observed that the absence of regular and reliable series of estimates of unemployment has been a major handicap in a realistic assessment of the employment situation in the country. A composite picture of employment market conditions prevailing in the country comprising of changes in the level of employment, un-employment and demand for manpower is sought to be built up at regular intervals on the basis of employment exchange statistics. These statistics for Himachal Pradesh have been given in the following table:—

TALBE 5—EMPLOYMENT EXCHANGE STATISTICS

Item	1955	1960	1966	1967	1968	1969	1970
1. No. of exchanges at the end of the period	1	3	6	10	10	10	10
2. No. of candidates registered ..	7,561	13,779	36,509	59,132	48,799	50,638	50,431
3. No. of vacancies notified ..	4,022	4,023	18,479	14,136	15,944	17,503	13,322
4. No. of candidates placed ..	2,685	2,551	4,728	8,885	8,687	11,380	8,291
5. No. on live register (at the end of the period)	1,652	5,186	19,741	24,052	52,888	50,904	44,344
6. Vacancies being dealt with (outstanding)	612	808	3,299	4,213	3,368	4,952	3,811

12. The number of applicants on the live register of employment exchanges, although providing a broad indication of the pressure of job-seekers on the employment market, does not reflect the level of un-employment mainly due to the following limitations:—

- (i) The employment exchanges being largely located in urban areas, the un-employed persons etc., in rural areas are substantially under-represented.
- (ii) Registration with employment exchanges being purely voluntary, not all un-employed persons register with the exchanges even in urban areas.
- (iii) A number of persons on the live register are already in employment and register themselves with a view to improving their prospects through alternative employment.

13. The live register figure, therefore, needs to be suitably corrected for these limitations on the basis of surveys and studies in the area before it can be used as an indicator of the level of un-employment. No such surveys/studies have been conducted in Himachal Pradesh.

14. With a view to studying the occupations attracting unemployed in Himachal Pradesh, the occupational distribution of applicants on live register of employment exchanges

has been given in the following table:—

TABLE 6—OCCUPATIONAL DISTRIBUTION OF APPLICANTS ON LIVE REGISTER OF EMPLOYMENT EXCHANGES

Period	Professional and technical	Administrative, executive and managerial	Clerical and allied workers	Transport and Communication workers	Craftsmen	Other skilled workers	Unskilled office workers and other unskilled workers	Total
1967 ..	1,322	75	625	1,145	1,559	945	18,381	24,052
1968 ..	2,750	66	1,083	1,659	3,400	980	42,950	52,888
1969 ..	4,366	74	2,037	2,318	11,316	2,765	28,028	50,904
Percentage increase in 1969 as compared to 1967 ..	230.26	—1.33	225.92	102.45	625.85	192.95	52.48	111.64

15. It would be observed that the largest increase of applicants on live register was in professional and technical and carftsman categories.

16. The largest single factor contributing to discontent in the country is the problem of educated unemployed. The problem has not only defied solution so far but is assuming ever increasing dimensions. This mass sterilisation of the energies of Indian youth is gradually driving them into undesirable channels. The educated unemployed include in their ranks not only matriculates and higher secondary but also graduates and post-graduates. In this context no study of the trends of employment can be complete without touching upon this aspect of this trend in educated unemployment. In this context, the following table gives the break-up of applicants on live register in Himachal Pradesh according to their level of education:—

TABLE 7—LEVEL OF EDUCATION OF CANDIDATES ON LIVE REGISTERS

Level of education	Number on live register at the end of				
	1967	1968	1969	1970	1971
1. Matriculates	5,688	9,448	13,418	11,536	9,732
2. Higher secondary including intermediate and undergraduates	996	1,666	2,397	3,022	1,778

3. Graduates	..	..	..	344	734	1,623	1,448	1,671
4. Post-graduates	..	..		210	185	393	338	209
TOTAL				7,238	12,033	17,831	16,344	13,390
Engineering graduates and diploma holders	..			281	246	621	352	—
TOTAL ON LIVE REGISTER	..	..		24,052	52,888	50,904	44,344	45,273

17. It would be observed that in Himachal Pradesh over a period of five years since 1967, the number of educated unemployed on the live registers of the employment exchanges has nearly doubled from 7,238 at the end of 1967 to 13,390 at the end of 1971. Thus, the Five Year Plans notwithstanding, more than one thousand educated young men are added to the ranks of the educated unemployed in the Pradesh every year.

18. The break-up of the relevant figures would reveal that the number of unemployed matriculates has increased from 5,688 at the end of 1967 to 9,732 at the end of 1971, that of unemployed under-graduates from 996 to 1,778 over the same period and that of job seeking graduates and post-graduates from 554 to 1,680. However, in view of the developmental programmes with high priority on road construction, the number of engineering graduates and diploma holders on the live registers has registered a minor decrease from 281 at the end of 1967 to 273 at the end of 1971.

19. For locating the manpower imbalances during the Fifth Five Year Plan in Himachal Pradesh, projections have been made in the light of the demand and supply of the categories of employees in short supply. The break-up of the vacancies likely to occur during the Fifth Plan *vis-a-vis* the availability of employees of these categories have been given in the following table:—

TABLE 8—LIKELY OCCUPATIONAL IMBALANCES DURING FIFTH FIVE YEAR PLAN

Category of employees				Likely demand* during Fifth Plan	Planned supply**
1				2	3
1. Doctors	..	..	..	512	175
2. Engineers (Degree holders)				5	—
(i) Agricultural Engineers	..	..	..	470	200
(ii) Civil Engineers	..	..	..	183	
(iii) Electrical Engineers	..	..	..	102	
(iv) Mechanical Engineers	..	..	..		

1	2	3
3. Engineers (Diploma holders)		
(i) Civil Overseers	1,750	875
(ii) Electrical Overseers	679	
(iii) Mechanical Overseers	381	
(iv) Surveyors	225	500
(v) Draftsmen	622	
4. Teachers:		
(i) University	428	N.A.
(ii) School	12,091	

20. It is observed that the intensity and the pattern of shortages in these sectors has more or less come to stay while unemployment will continue in other sectors e.g. agriculture, industry, crafts, etc. These trends, therefore, pose a challenge to the planners and so far no solution of the problem appears to be in sight.

*The likely demand has been worked out on the basis of requirements of employees in the plan schemes included in Fifth Five Year Plan.

**The likely supply has been worked out on the basis of the capacity of the institutes in the Pradesh and number of seats reserved outside the state in institutions vis-a-vis the pass percentages.

†Since the teachers training courses have been discontinued, the number on live registers of the Employment Exchanges has been taken as the likely number available.



GROWTH OF POPULATION IN HIMACHAL PRADESH DURING THE PERIOD 1971-2001

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Of all the problems confronting man during the past two decades, none is perhaps more grave or disturbing in the long run than that of man's uncontrolled fertility. Rapid population growth in the recent past has posed a serious threat to the economy of our country. That an excessive rate of population growth in various regions, nations and in the world as a whole—the greatest single barrier in the path of overall planned economic and social development, is conceded by all thoughtful citizens and Governments. The experience of the last twenty years has shown that despite huge investment made to increase food production in India, serious imbalances still continue to persist between availability and requirement of food and this gap is widening day by day due to the abnormal growth of population, which is following the exponential law of growth rate. The fundamental difference between linear and exponential growth is that accretion on a linear basis is manageable, because the quantity increases by a constant number in a fixed period of time. But exponential increase is deceptive because it generates immense numbers very quickly.

2. Nothing can illustrate this better than the example of the lily pond, where the rate of growth of lilies is such that starting from just one flower, the entire pond is covered in 30 days by the simple process of the number of lilies doubling every day. But the significant fact to note is that on the 29th day only half the pond is covered by lilies. So there is only one day left to act, before the whole pond would be choked.

3. In every field of endeavour then, which is subject to such type of growth, we must take cognizance of this frightening mathematical formula. The figures of world population are fairly well known and they are worth repeating. Today the world's population has exceeded the three and a half billion mark. It took mankind about a million years to reach the first billion. That was in 1830. It took only a hundred years to reach the second billion in 1930. And it took a little more than thirty years to reach the third billion. And, at the present

rate of increase (2.1 per cent each year) the human population will double the already swollen population in just 33 years and reach 7 billions by the end of this century, in 2,000 A.D.

4. India's case is an excellent example of rapid growth in population. India, with only 2.4 per cent of the world's total land area, has to support 550 million or 14 per cent of the total world population. This population enjoys less than 1.5 per cent of the total world income. In the decade 1961—71, the population of India increased by 24.8 per cent. Some of the Asian countries witnessed even a greater increase. Against this, the rise in most of the European countries was less than 10 per cent. Such a situation lends credence to the theory that, in case adequate steps to limit the numbers are not taken, Asian countries are heading towards a phase of "population explosion".

5. An analysis of the past data on population growth in Himachal Pradesh reveals that the growth of population since 1901 has been somewhat fluctuating, during the first five decades ending 1951. In fact there was even a fall in population in the decade 1901—11. But during the recent two decades there has been a rapid rise in the growth rate. These facts can be better viewed from Table 1 which shows the decennial percentage variation in the population of Himachal Pradesh:—

TABLE 1—DECENNIAL PERCENTAGE VARIATION IN THE POPULATION OF HIMACHAL PRADESH

Year	Total population (In lakhs)	Decennial percentage increase (+) or decrease (—)
1901	19.20	..
1911	18.97	—1.22
1921	19.28	+1.65
1931	20.29	+5.23
1941	22.63	+11.54
1951	23.86	+5.42
1961	28.12	+17.87
1971	34.60	+23.04

The decade 1961—71 witnessed an increase of 23.04 per cent in the population of Himachal Pradesh, the highest rate ever recorded. On the basis of this rate of growth, it can be said that in Himachal Pradesh nearly 72 thousand additional mouths have to be fed every year. These figures indicate that a major effort will have to be devoted to supplying the needs of the added population, thus, drastically reducing the resources available for raising living standards and increasing opportunities for adult population. The dilemma of added productivity largely nullified by added population not only applies to this State or country, but also to many countries in Asia, Africa, Latin America and the Middle East.

Although the availability of goods and services has increased considerably over the last two decades, their per capita consumption has not increased commensurately. Unemployment and under-employment also seems to be rising. Illiteracy in rural areas still is the rule, despite the efforts made in the field of education. While attitudes have been slowly changing, the rural sector is still a stronghold of traditionalism.

6. The rapid and unprecedented growth of population has given rise to problems of resource inadequacy and ecological imbalance. With the growth of population, the total available land does not, unfortunately increase. With even great efforts, only a little marginal and hitherto untillable land can be brought under the plough. So the per capita farm holding has been gradually and steadily dwindling from decade to decade. And the present per capita holding of less than one acre is definitely uneconomical. Hence the agitation of land for the landless tillers and the illegal occupation of relatively useless land adds to our multitude of problems. Land hunger of a predominantly agricultural population—nearly 80 per cent—will continue to plague the planners and politicians alike.

ANALYSIS OF FACTORS RESPONSIBLE FOR RAPID GROWTH IN POPULATION

7. The situation that has given rise to a rapid growth of population of the country in the recent past has been analysed by several demographers and social scientists. It has been found that the major cause of this high rate of growth is not so much the high birth rate (it is relatively low in terms of Asian standard) as the increasing success with which the health and medical services have been implemented during the past Five Year Plans to improve health conditions and eradicate diseases. As in other parts of the country, several measures for the control of communicable diseases have been taken in Himachal Pradesh right from the beginning of the First Five Year Plan. The anti-malaria measures taken so far have caused a marked decline in annual incidence of malaria and deaths caused on account of this disease. The child spleen rate diminished to zero in 1959-60. Similarly, the child parasite rate and infant parasite rate came down to zero in 1957-58 and 1959-60, respectively. Other communicable diseases like cholera and small-pox have been brought under control with considerable success. The number of positive cases detected through sera testing carried out under the programme of control of venereal diseases declined from around 30 per cent during 1952 to about 13 per cent in 1962. These results are indicative of the extent to which a decline in mortality might have been brought in this Pradesh. The increase in agricultural production as a result of the Green Revolution, the development of better communications enabling rapid movements of foodgrains from the United States and other friendly countries, which have prevented deaths arising from famine conditions—all of these have contributed to a definite decline in the death rate.

8. In response to these relatively improved health conditions, the death rate has come down and life expectancy for the country as a whole, has risen from 32 years in 1950 to 52 years in 1970. This means that a child in India at the moment of its birth can reasonably expect to

live 52 years. An increase of 20 years i.e., one year per annum indicates a remarkable decline in mortality. Another important feature of the results of various censuses has been a further widening of the base of age-pyramid. The extended pyramid base is indicative of greater increase in the number of potential mothers which may in turn result in a high birth rate in future.

POPULATION PROJECTIONS

9. The value of population projections is well known. If a plan for socio-economic development is to have any chance of realistic implementation, it is necessary to make an intelligent assessment of the dynamics of population growth. In a situation when we think that population is increasing rapidly and is expected to undergo even a faster growth, we are immediately led to conceive its implications in the economic and social spheres.

10. Before proceeding to describe the procedure followed in the present projection study, it may be mentioned that the component method which takes into account the various factors on population, is the most accurate and popular method. But in the absence of any dependable data on the future behaviour of mortality and fertility and due to deficiencies in the vital statistics available in this Pradesh, use had to be made of the modified geometric progression method for making two projections. According to the results thrown up by Sample Registration by the Registrar General of India for rural population of Himachal Pradesh, the birth and death rates for the first half of 1971 has been reported as 36.7 and 14.9 per thousand, respectively. In the first projection it has been assumed that during 1971—76, the population will grow at the rate of 2.2 percent per annum, which is thrown up by the results of Sample Registration during 1971. In view of the increasing popularity of family planning measures, it is reasonable to expect a fall in birth rate during 1976—81. Due to further rise in life expectancy and more medical facilities, nutritional standards and social and economic conditions, the fall in death rate during 1976—81 may not be of the same order. It appears legitimate to assume that the growth rate will fall by 2 points leaving the rate of natural increase at 2.0 percent per year. For the periods 1981—86 and 1986—91 it was assumed that the rate of natural increase will fall further by 2 points in each period on account of decrease in the birth rate due to the effects of family planning and other measures, while the death rate experiencing almost no more decrease, because of its already low level. It was, therefore, assumed that the population will increase at a rate of 1.8 and 1.6 percent per year during the periods 1981—86 and 1986—91, respectively. The same rate of natural increase i.e. 1.6 percent per year has been assumed for the period 1991—2001. The second projection is based on the assumption that the Pradesh's population will grow at the rate of 2.1 percent per year, which is the rate of growth experienced during the 1961—71 decade. The projections are presented in Table 2.

11. Migration also plays a part in population changes but this factor could not be accounted for in the present study due to the absence of any dependable data on migration.

However, in the case of Himachal Pradesh, migration is believed not to have any appreciable effect on the population growth.

TABLE 2—PROJECTED POPULATION OF HIMACHAL PRADESH 1971 TO 2001

(In lakhs)

Year	I projection			II projection		
	Male	Female	Total	Male	Female	Total
1971	17.67	16.93	34.60	17.67	16.93	34.60
1976	19.71	18.89	38.60	19.60	18.78	38.38
1981	21.76	20.85	42.61	21.75	20.83	42.58
1986	23.77	22.79	46.56	24.13	23.11	47.24
1991	25.75	24.67	50.42	26.77	25.64	52.41
1996	27.88	26.71	54.59	29.70	28.45	58.15
2001	30.18	28.92	59.10	32.95	31.56	64.51

The above results reveal that the lowest estimate of population in Himachal Pradesh for the year 2001 is 59.1 lakhs, in case the assumption holds good i.e., the decline in fertility rate takes place at a faster rate than mortality during the period 1976—91. In other words, it means that the fertility has to be controlled by family planning and other measures and birth rate shall have to be brought down to 23 per thousand from its present level of 36.7. This can be achieved only if the family planning programme is suitably intensified. Other gigantic task to meet this problem is to pay a greater attention to the children below the age of 15 years who contribute immense number of girls to the reproductive age-group every year. The prolonged education and training of women and the limitless opportunities for careers also act as a deterrent to fertility. The emancipation of women is the major factor in the evolution of the low birth rate. Himachal Pradesh, with a literacy percentage of 31.32, has to make up much of the leeway particularly in the field of female education. According to the 1971 Census, only 20.04 percent women in the State were literate. With a view to achieving better results in the field of girls education, the Government has chalked out ambitious schemes for giving village allowance to 100 lady teachers posted in rural areas, special attendance scholarships to 1,160 girl students in primary and middle classes, free cloth for school dress to 800 girls and maintenance stipends to middle class girl students whose parents have per-force to put them up in hostels. Besides this, the programme also provides for provision of free text books for 4,500 girl students and stationery to another 2,000 girls attending schools at primary and middle stages. In the high schools, the Government would give special freeships to 1,500 poor and deserving girl students and free clothing to 500 girls. It is, therefore, the investment made on the children and the youth of to-day, by way of their education, nutrition and general welfare that is the best insurance for checking the rapid growth of population.

12. In so far as raising the minimum age at marriage is concerned, although there have been different opinions, it is certain that if the age is raised to about 20 or 21 years in the case of girls and 25 in the case of boys it would make a positive dent on the birth rate. This is because the first five years of marriage are most fertile from the point of view of reproduction. By deferring this initial period by 5 years as compared to the existing legal position, some reduction in birth rate can be effected. The passing of the Act on the medical termination of the pregnancy in 1971 the Government has already proceeded in the direction of reducing the birth rate.

FAMILY PLANNING PROGRAMME

13. The assumptions in respect of possible decline in the fertility necessarily involve reduction in birth rate by different magnitudes during the subsequent plans. This can be achieved only if the family planning programme is suitably intensified. So far, among the various measures taken, sterilisation programme has been advocated on account of its significant impact on the birth rate and its cheapness. The view of some experts *is that to achieve a decline of 0.23 point in the birth rate in a quinquennium, 0.228 women per thousand of population per annum will require to be sterilised. Another important study based on National Sample Survey data carried out by the Indian Statistical Institute reveals that if the married women aged 20—44 years with at least three children were eligible for sterilisation, then the birth rate would fall by about 20 per cent in 10 years with seven sterilisations per thousand population per annum and by about 40 per cent in 10 years with an increased rate of 14 sterilisations per thousand.

14. The demographic and scientific basis of having three children has been made amply clear by the census of 1961. For the country as a whole, the death-rate was found to be 19 and birth-rate 40 per thousand, the first birth-rate of those having only one child constitute 8.8, the second birth-rate of those having two children 8.4 and the third birth-rate of those having three children 7.2. Thus the total of the first, second and third birth rates comes to about 24. The excess birth-rate categories or those having more than three children constitute 15.4 This is a result of considerable significance indicating that in order to bring about an adequate reduction in birth-rate, sufficient to close the existing demographic gap and to stabilise the growth of population, it is necessary that the family planning programme should highly emphasize its aim of achieving a maximum of three children per family.

15. An overall review of the entire family planning programme reveals that there are still three large areas where we are groping for correct answers and solutions. They are in the fields of motivation, communication and bringing out what may be called "an ideal contraceptive" suitable for our conditions. I feel strongly that some serious high powered research must be initiated at the national level to find as far as possible permanent answers to these three baffling problems.

*Dr. S. N. Aggarwala, Director, Demographic Research Institute.

16. The first is motivation. How do you motivate a husband or a wife or a couple to take to family planning? The question sounds easy but a real workable answer has so far eluded us. How do we explain to the average couple in our country that a large family is incompatible with a higher standard of living? How does one convince them that the simplest way out of family poverty is to have less children? If you want to provide a better home, more and better food, clothing, educational and medical facilities, then it is obvious that you should not have more than two or three children. This statement looks so simple, so logical and so full of common sense. But go to a remote village of the Pradesh and tell the villager that he should postpone marriage and when he marries not to have more than one or two children, and the response you get is a very adverse one. The problem of poverty at the most basic individual family level does not seem to help. Perhaps incentives can play some part. Then there is the question of a money incentive versus a service incentive. Perhaps some anthropologists can help us here, particularly on the kind of incentive that will best promote family planning under the prevailing conditions. All these questions need a careful study and adequate answers if we are to make significant progress in making the poor couples who desperately need family planning accept voluntarily family planning services.

17. The second problem is that of communication. In the ordinary sense, communication in our country is extremely poor, and all the existing channels of mass media reach only to a small fraction of our population. Predominant illiteracy is a barrier to the effectiveness of the printed words and the radio is too expensive for most of the rural population of the Pradesh. So there is the need to take the message of family planning to every nook and corner of the country, particularly the rural areas. To achieve this end, fortnightly campaigns at the state and national level are launched to make the family planning programme a success.

18. The third and the last problem is the desperate need for an ideal contraceptive suited to Indian conditions.

CONCLUSIONS

19. Under certain assumptions, made in this study, the lowest estimate of population at the end of current century works out to 59.1 lakhs, having been based on the assumption of moderate decline in mortality and a more rapid fall in fertility. There is, however, a need for specialists to examine these assumptions and to suggest, on the basis of scientific evidence, any other situations in which mortality and fertility could be expected to behave in this Pradesh.

20. To restrict the population growth at the minimum level, birth-rate from its present level (around 36) shall have to be brought down to 23 per thousand. Intensification of the family planning programme in the subsequent plans is, therefore, the right answer.

21. There is need to examine the performance of different methods of population control adopted in this Pradesh so that each is assigned its place in future planning of the family planning programme.

22. The need for limiting family size by having a maximum of three children has been brought out with the help of scientific evidence. Necessary persuasive measures should, therefore, be taken to make the families to go in for sterilisation immediately after the birth of third child.

23. Another step to check the rapid growth of population would be to dissuade the people from the custom of early marriage, wherever it exists.

24. We must control our numbers voluntarily, otherwise we may be sure that the traditional methods of famine, pestilence and war will provide us with highly unpleasant limiting controls.

25. The vital statistics of the Pradesh need to be placed on a firm footing. Availability of dependable estimates of birth-rate and death-rate on an annual basis would prove helpful to keep a close watch on the behaviour of mortality and to gauge the success of family planning drive in reducing the birth-rate in accordance with the agreed phased programme.



HYDRO-ELECTRIC GENERATION AND ITS UTILISATION IN HIMACHAL PRADESH

—V. K. Malhotra,
*District Statistical Officer,
Sirmur District, Himachal Pradesh.*

The infinite beauty of our country is that it presents a picture of unity in diversity. Each State has its distinct geo-physical contours and is endowed with varied gifts of nature and varying potentialities. Himachal Pradesh, the 19th State, has its own unique status-with snow-capped peaks, lush green forests, open valley and a perennial river system. The rivers Chenab, Ravi, Beas, Sutlej and Yamuna and their tributaries flow through the Pradesh. The abundant water resources, duly exploited for hydro-electric generation, are bound to usher in an era of prosperity for the State. Cheap power is essential, not only to lighten the home, but is also instrumental in bringing about all round economic development. This is the basic civic amenity which the State has to provide to every shelter. Moreover, the harnessing of rivers will have salutary effect on floods, surface and under ground water will be properly channelised and utilised for promoting the green revolution in the Pradesh.

COMPARISON WITH OTHER SOURCES OF ENERGY

2. There are other sources of energy like coal and lignite, diesel, gas and nuclear fuels which can be tackled for power generation. Various States in the country are taking up projects according to their resources and demand. But power generation through these sources is comparatively costlier especially in Himachal Pradesh which is blessed with perennial water resources. Hydel projects involve transportation over long distances for power generation only during the construction period and thereafter the flowing water provide an inexhaustible source of energy. Moreover, these do not create any problem of environmental pollution, concomitant with other power plants causing thermal pollution, radio activity or producing carbon dioxide, etc. Power demand of the country is rising rapidly and some areas are facing crisis in this matter. It is, therefore, imperative that all the sources of energy be tapped to the fullest extent to meet the requirements of the situation. The power plans of the country, are well co-ordinated, taking all these factors into account and power projects in the various States, indeed,

reflect utilisation of the available resources to meet the local and general demand of the area.

3. With no fuel consumption, hydel power helps in conserving other scarce sources of energy which are equally important for the national economy. The hydel power is cheaper than other sources as per estimation of the Energy Survey Committee, set up by the Government of India in 1963, which made comparative study of investment and generation per kilowatt in typical hydel, thermal and nuclear stations in the country. The investment per kilowatt in hydel, thermal and nuclear plants worked out to Rs. 1,475; 1,343 and 2,222 with 60 percent plant factor and prices obtaining in 1963-64 and cost of generation per kilowatt-hour worked out to 2.9 paise, 4.6 paise and 5.8 paise, respectively. There might have been some distortions since then, but, the fact remains that hydel power is the cheapest even to-day. This clearly indicates the comparative cost advantage of the hydel projects over other projects. The additional advantage of many of the hydel projects is their irrigation potential, which is so important for the economy of rural areas.

4. The power crisis in the northern region in recent years has brought Himachal Pradesh in the forefront to resolve that situation. The perennial rivers which passed unnoticed in the hills, have figured prominently on the power map of the country. Detailed investigation of the hydel potential and projects has been taken in hand. It has been estimated that the economically exploitable hydel potential of the Pradesh is over 8.5 million kilowatts which is more than 20 per cent of the national hydel potential which is of the order of 41 million kilowatt. For the speedy development of water resources of the State, the Central Government has taken up major power projects in hand. The Baira-Siul Hydel Project in Chamba district, the Beas-Sutlej Link Project in Mandi district and Pong Dam in Kangra district are projects under execution in the Central sector.

5. The Himachal Pradesh State Electricity Board (H.P.S.E.B.) set up in September, 1971 is looking after investigation, planning and execution of the projects and work relating to the generation, transmission and distribution of electricity. The Board has drawn up elaborate plans for the optimum and speedy utilisation of the hydel potential of the Pradesh. It has six projects under execution. It has also prepared a shelf of projects which are at different stages of investigation.

POWER GENERATED AND CONSUMED

6. The electricity generated in Himachal Pradesh in 1950 was 0.36 million Kwh, mainly through hydel/diesel sets at Chamba, Solan, Jubbal, Mandi, Nahan and Sundernagar. The generation increased to 0.87 million Kwh in 1955 and to 0.95 million Kwh in 1960-61. The progress during the next decade (1962-71) had been rather sharp. The generation during the year 1970-71 was 52.8 million Kwh which works out to 55 times of the electric generation in 1960-61.

7. The consumption of electricity is also rising in the Pradesh. It increased from 0.0 million Kwh in 1950 to 3 million Kwh in 1960-61. With the extension of electricity to more and more rural and urban areas and its diversified use, the consumption increased to 3.9 million Kwh in 1965-66 and 112 million Kwh in 1970-71. An all round increase has been witnessed in the use of electricity for various purposes. The overall consumption has though increased but the per capita consumption of electricity for the Pradesh is much below the level of the country. The per capita consumption in 1970-71 was 33 Kwh in the Pradesh as against the national average consumption of 87 Kwh. The following table throws light on the generation and consumption of electricity in Himachal Pradesh during the last two decades:—

TABLE 1—ELECTRICITY GENERATED AND CONSUMED IN HIMACHAL PRADESH

(In '000 Kwh)

Item	1950	1955	1960-61	1965-66	1970-71
1. Electricity generated	358	871	952	2,164	52,841
2. Electricity consumed:					
(a) Domestic	—	398	954	3,385	15,171
(b) Commercial light and small power ..	—	167	962	2,887	9,936
(c) Industrial power	82	297	683	7,162	12,399
(d) Street lighting	—	175	308	374	884
(e) Irrigation and agriculture	—	—	5	—	756
(f) Public water works and sewage pumping ..	—	20	98	60	1,399
(g) Others	915	—	—	—	71,419
TOTAL ELECTRICITY CONSUMED	997	1,057	3,010	13,868	1,11,964

8. It would be seen that the gap between generation and consumption of electricity has been widening in the Pradesh. This gap is proposed to be bridged with a faster rate of development of energy in comparison with the rate of increase in consumption.

DEMAND OUTLOOK

9. The demand for power is likely to increase more rapidly in future. The objective set forth for the Fifth Plan is to electrify, at least, 50 per cent of the total number of villages of the Pradesh, which according to Census—1971 are 16,920. The villages electrified upto the end of March, 1972 were 3,249 (corresponding to Census—1961) and including hamlets, the figure was 4,162 upto September, 1971.

10. The extension of rural electrification is essential to conserve the forest wealth of the Pradesh. The forest resources are being fast depleted by wreckless felling and use of wood for heating purposes. The National Policy on Forests for the hilly areas suggests 60 per cent of the area to be covered under forests, whereas only 38 per cent of the area is under forests

in Himachal Pradesh. The problem of soil erosion in the river valley areas, threat to the life of hydel projects and climatic stability also call for preservation of forests and supply of cheap electricity to replace wood as a medium of cooking and heating.

11. The power demand as estimated by a specially constituted committee of the Department in 1969 is given in the table below:—

TABLE 2—ESTIMATED PEAK DEMAND OF POWER IN HIMACHAL PRADESH

(In Mega Watt.)

Purpose	Year				
	1974	1979	1984	1989	1994
1	2	3	4	5	6
1. Domestic, agricultural, commercial, etc. ..	42	74	106	144	190
2. Industrial	6	16	34	56	75
TOTAL ..	48	90	140	200	265

PROJECTS UNDER EXECUTION

12. The Himachal Pradesh State Electricity Board is currently executing the following projects:—

Giri-Bata Project—Stage-I

13. This is the first major multi-purpose project under execution in the Pradesh located in Sirmur district. It would have an installed capacity of 60 Mw, with two units of 30 Mw each, utilising the water of river Giri at Jateon near Dadahu. The first stage of the power project though, approved by the Government in February, 1967 for Rs. 8.91 crores, is likely to cost more than Rs. 14 crores because of certain special difficulties experienced during execution and the normal increase due to labour and material cost escalation. Upto the end of May, 1972 an expenditure of Rs. 6.56 crores had been incurred on the project.

14. The following are the main features of the project:—

- (i) A 160 metre long barrage at Jateon to provide for adequate pondage;
- (ii) An intake regulator with arrangement for silt ejection;
- (iii) A concrete lined tunnel 7.4 km long, 3.65 metre in diameter. In addition, 0.8 kilometre of access adits have to be constructed bringing the tunnel length to 8.2 kilometres;
- (iv) Steel lined twin pressure tunnels and two steel penstocks leading water into a power house, utilising a head of 180 metres;

- (v) A tail race channel 1.3 kilometre long with a carrying capacity of 15,000 cusecs of water; and
- (vi) 132 kv, single circuit, transmission line 18 kilometres long on steel towers connecting the power house to the Northern Regional Power Grid at Dhakrani in Uttar Pradesh.

15. The major civil works viz., barrage, tunnel, penstock and power house are being executed through contractors while others undertaken departmentally.

16. Some unforeseen difficulties have delayed the completion of the project originally scheduled for completion in 1973-74. The main difficulties were of geological and topographical nature which necessitated a change in tunnel alignment and location of the power house. The presence of lethal/inflammable gases inside the tunnel and labour trouble interrupted the tempo of work.

Uhl Hydel Project Stage-II

17. The project, located at Jogindernagar utilises tail race waters of existing Shanan Power House for generating electricity. All the three units of 15 Mw each have already been commissioned. Some of the civil works only are continuing.

Nogli Power House Extension

18. Two units of 500 Kw each of this extension scheme in Simla district are nearing completion and will raise the total installed capacity of the power house to 2,500 Kw.

Rukti Micro-Hydel Scheme

19. The project has been delayed because of revised scope of the scheme, thereby, raising the installed capacity from 100 Kw to 1,500 Kw. Situated in Kinnaur district, it is likely to be completed in Fifth Plan.

Gharola Micro-Hydel Scheme (Chamba district)

20. It has been recently commissioned and has an installed capacity of 50 Kw.

Sissu Micro-Hydel Scheme (Lahaul and Spiti district)

21. Advance action for the execution of this scheme with an installed capacity of 100 Kw (two units of 50 Kw each) is in hand.

CHOICE OF UNIT SIZE

22. Although the big size units are normally expected to prove more economical, in view of transport difficulties small units have been installed for electrification of border areas of Kinnaur and Lahaul and Spiti districts. These areas cannot be economically electrified by

extending the transmission system from the major power schemes. It is thus found economical to launch micro-hydel schemes, capable of feeding limited surrounding areas.

PROJECTS UNDER INVESTIGATION

23. Investigation of projects is non-remunerative until the projects are cleared and executed. But in the broader interest of the economy, it is the preliminary and most essential aspect of any project. The Himachal Pradesh State Electricity Board has carried out elaborate basin-wise studies and prepared a comparative shelf of projects to be taken up in Fifth and successive plans. On the basis of detailed reports, a choice can be made between the most economical and suitable projects for meeting the future requirements of the area.

24. The investigations of the following projects are in progress with the intention of taking them up, subject to clearance by the Planning Commission, during the Fifth Plan:—

TABLE 3—PROJECTS UNDER INVESTIGATION DURING FIFTH PLAN

Project location 1	Installed capacity 2	Approximate cost (Rs. crores) 3	Period of construction in years. 4
1. GENERATION:			
<i>Major projects:</i>			
(i) Bhaba	150MW	14.00	5
(ii) Baspa	400MW	40.00	7
<i>Medium Projects:</i>			
(iii) Giri	60MW	15.00	Will be completed in Fifth-Five Year Plan.
(iv) Malana	75MW	12.50	5
(v) Bassi (Augmentation)	15MW	2.00	2
<i>Small Projects:</i>			
(vi) Andhra	6MW	1.95	4
(vii) Baner	6MW	1.05	4
(viii) Thiroth	1MW	0.50	5
(ix) Rukti	1,500KW	0.50	3
<i>Micro-Schemes:</i>			
Rongtong, Holli, Augmentation to Chamba, Gharola, Belling, Shansha, Mehbar, Jubble, Nogli	200/500 KW	2.30	4

Preliminary surveys and investigations in respect of the following projects have also been initiated for execution in the Sixth and subsequent plans:—

TABLE 4—PROJECTS BEING SURVEYED/INVESTIGATED

Basin	Project	Installed capacity (MW)
1. Sutlej Basin	1. Kol Dam	1,250
	2. Shongtong Wangtoo	400
	3. Thopan Powari	200
	4. Jangi Thopan	175
2. Ravi Basin	5. Barla	200
	6. Chamera	400
	7. Machhetri	100
	8. Hibra Dam	100
3. Beas Basin	9. Parbati Project	1,900
	10. Kulu Power Project	42
	11. Ghoropa	32
	12. Gandherni	17.5
	13. Sarvari	14
	14. Binwa	4
4. Chenab Basin	15. Gyaspa Dam Project	225
	16. Bardang	111
	17. Seli	165
	18. Raoli	500
	19. Billing Augmentation	100
	20. Shamsha Augmentation	100

In addition, the Pradesh will get its share in the projects like Baira-Siul, Yamuna hydel and other projects located in the Pradesh.

TRANSMISSION AND DISTRIBUTION

25. An adequate net-work of transmission and distribution lines is important for the economic operation of any power system. It ensures better utilisation of power and reduces the transmission losses. Starting almost from a scratch in 1951, the Pradesh has a wide net work of high-tension and low-tension lines. Upto September, 1971 the total length of H.T. and L.T. lines laid in the Pradesh were 3,911 and 4,402 kms, respectively. The Table No. 5 on next page indicates progress in this field.

TABLE 5—PROGRESS OF ELECTRIFICATION

Period				Villages electrified (No.)	H.T. lines laid (km.)	L.T. lines laid (km.)
1				2	3	4
1.	Before 1st Plan	..	..	11	Nil	25
2.	During 1st Plan	..	..	21	87	51.4
3.	During IIInd Plan	..	..	557	731	539
4.	During IIIrd Plan	..	..	598	764	975
5.	Works transferred from Punjab to H.P. on 1-11-1966	..	..	548	940	693.5
TOTAL				1,735	2,522	2,283.9
6.	Upto September 1971	..	..	4,162*	3,911	4,402

*Including hamlets, pattis tikkas, etc.

26. The transmission and distribution system in the Pradesh still needs considerable modification, with the re-organisation of the State so as to feed all the areas directly from the generating stations within the State instead of 14 feeding points in Punjab and Haryana. Moreover, power generated in excess of requirement has to be transmitted to the nearest off-take point in the Regional Grid, which in due course, would be inter-connected so as to form an all-India Grid.

27. The transmission system within the Pradesh is being so designed that the primary voltage in the State would be 132 kv and the sub-transmission voltage 33 kv. The other voltages which are existing, are just being retained, with minor additions, to provide power in local area. Thus, provision has been made to supply electricity to industrial units like paper factory and cement factories in the Fifth Five Year Plan.

FINANCING THE PROJECTS

28. Hydel projects take considerably longer time in investigation and completion than the conventional thermal or even nuclear stations. The resources of the State being limited, there is need of making available institutional loan to the Board on easy terms. The Board has already obtained loans from the Rural Electrification Corporation for rural electrification in Mandi, Kangra and Sirmur districts. In the overall interest of the economy of the Northern States, the Centre should immediately take up more projects in the Pradesh and thus also strengthen the economy of the Pradesh by securing royalty on power generated on its waters and share in irrigation levy. Although the investment required for the full exploitation of the Pradesh's power potential is beyond our capacity. It is estimated that the Pradesh can earn a net annual revenue of Rs. 200 crores if its water resources are exploited fully.

PROSPECTS

29. Power would set the pace of prosperity in the Pradesh. It would serve as an industry in itself and promote industrialisation at the same time. A big source of revenue to the Pradesh, conserver of its forest wealth in keeping with the National Policy, preserver of its horticultural wealth, a generator of employment the development of power can push the State forward to more rapid all round economic development. It is destined to occupy a pride place in the economy.

BACKWARD AREAS OF CHAMBA DISTRICT

—R.K. Bansal,
*District Statistical Officer,
Chamba District, Himachal Pradesh.*



Himachal Pradesh witnessed a new era with the launching of the First Five Year Plan in 1950-51. The primary aim of the Plans has been to provide basic necessities to all and at the same time emphasise the place of human values in economic and social development. The Government, through its policies has to safeguard the interests of the weaker sections of the society and enable them as speedily as possible, to come up to the level of the rest. In other words, the benefits of economic development should accrue more to the relatively less privileged class of society and there should be a progressive reduction in the concentration of wealth. But the development of the State even after a little more than two decades of planned development has been only partial as a number of areas in the State are still inaccessible and backward. The following areas in Himachal Pradesh have so far been identified as remote, inaccessible and backward.

<i>Areas</i>	<i>District</i>
1. Bharmour and Pangi	Chamba
2. Chotta Bhangal	Kangra
3. Bara Bhangal	
4. Dodra Kwar	
5. Pandra Bis	Simla
6. Athara Bis	
7. Kashapat	
8. Manali-Ujhi	Kulu
9. Outer Seraj (Ani and Nirmand)	

2. Chamba district comprises the erstwhile princely State of that name and became part of Himachal Pradesh on 15th April, 1948. The district has an area of 8,195 square kilometres with a population of 2,55,233. The entire area is mountainous with altitude ranging between 2,000 feet to 21,000 feet above mean sea level. In other words, the climate varies from semi-tropical to semi-arctic. The higher regions of the district remain snow bound for a major portion of the year. This coupled with difficult means of communications have always stood in the way of socio-economic development of the people in the district. The entire district is backward but people in Pangi and Bharmour valleys live a sub-human existence being inaccessible and remote. The important indices of backwardness of these areas as compared to Chamba district are given below:—

TABLE 1—IMPORTANT ECONOMIC INDICATORS

(Position as on 31st March, 1971)

No.	Item	Unit	Chamba district	Bharmour Sub-Division	Pangi Sub-Division
1.	Geographical area according to village papers	Hec.	8,89,908	1,81,832	3,56,804
2.	Net cultivated area	-do-	39,783	3,929	2,073
3.	Gross cultivated area	-do-	60,478	5,517	3,013
4.	Net irrigated area	-do-	3,929	4	1,024
5.	Gross irrigated area	-do-	7,281	8	1,914
6.	Area under foodgrain crops	-do-	57,147	5,423	2,882
7.	Area under non-foodgrain crops	-do-	3,331	94	131
8.	Area under forests	-do-	1,07,869	20,476	34,229
9.	Progeny orchards-cum-nurseries	No.	12	2	2
10.	Seed multiplication farms	-do-	8	—	1
11.	Co-operative societies	-do-	241	21	15
12.	Membership in co-op. societies	-do-	23,883	2,948	2,121
13.	Loans advanced by co-op. societies	(Rs. '000).	1,537	4	5
14.	Villages electrified	No.	216	6	—
15.	Micro-power generation station	-do-	2	1	—
16.	Road length maintained by P.W.D.				
	(i) Double lane roads	Kms.	69	—	—
	(ii) Single lane roads	-do-	417	8	16
	(iii) Jeepable roads	-do-	127	24	17
	(iv) Less than jeepable roads	-do-	979	111	61
17.	High/Higher Secondary Schools	No.	25	2	2
18.	Middle Schools	-do-	66	6	4
19.	Primary Schools	-do-	432	65	59
20.	Veterinary hospitals/dispensaries	-do-	11	2	1
21.	Stockman centres	-do-	42	4	6
22.	Civil hospitals/dispensaries	-do-	13	—	1
23.	Ayurvedic hospitals/dispensaries	-do-	34	6	4
24.	Primary Health Centres	-do-	8	1	1
25.	Beds available	-do-	434	12	10
26.	Registered factories working	-do-	6	—	—

BHARMOUR SUB-DIVISION

3. The original name of Bharmour is believed to be Bharmapura which was the capital of erstwhile Chamba State till 920 A.D. Subsequently, in the time of Raja Sahil Verman the seat of the Government was shifted to Chamba. The geographical area of this sub-division, according to the Surveyor General is 1,326.9 square kilometres with a population of 27,067 according to census 1971. Of the total 251 revenue villages, 145 are uninhabited and about 74 per cent of the population belongs to *Gaddi Tribe*. Due to heavy snow-fall for about three to four months during winter, the *Gaddis* generally migrate to lower hills and plains along with their flock of sheep. During this period the main source of livelihood is sale of wool and employment of their children and women as domestic servants. A small percentage of population is left behind to look after the fields, cattle and spinning and weaving of woollens. The migration is necessitated for the reasons that the pastures and the grazing lands are covered with snow during winter which poses the problem of grazing the large number of sheep and goats maintained by the people and secondly the raw wool which is available in large quantities is to be sold outside for want of local markets in the area. The economic condition of the people is very poor and they can afford only basic necessities. The development of the area has been rather tardy due to the lack of communications, slopy lands, hilly terrain, uneconomic size of holdings, lack of irrigation facilities besides the apathy of the people in view of their conservatism and illiteracy for adopting improved agricultural practices and giving up old customs and traditions. At the same time, short working season, absence of raw material, power and skilled labour has stood in the way of industrial development of the area.

4. Roads are the arteries of an area as they enable the transport of man and material from one place to another. There are only 8 kilometres of motorable road within Bharmour Sub-Division on Chamba-Kharamukh road. Even the headquarters of the sub-division is 15 kilometres from Kharamukh by a jeepable road thus there are about 0.603 kilometre road per 100 square kilometres area which is almost negligible. The other roads are either mule roads or village foot paths. At present, about 111 kilometres roads of less than jeepable specification are existing in the area but most of these roads are not in good condition and need repairs. The slow progress in the field of road development may be attributed to the factors like heavy cost of cutting hills, difficulty in the carriage of construction material and machinery and limited working season in the area.

5. Agriculture and allied occupations such as sheep rearing, weaving and spinning of wool, etc., are the main occupations of the people. According to the village papers, the total geographical area of the sub-division is 1.82 lakh hectares. Of this, only 2 per cent or 3,929 hectares form the net area sown, 85 per cent or 1.55 lakh hectares was under permanent pastures and grazing land and 0.20 lakh hectare was under forest. Of the meagre net area sown, only 4 hectares were irrigated. The average yield of crops is, therefore, low and the area is deficit in foodgrains. *Kharif* is the main agricultural season and the crops grown are wheat, maize, barley, millets, etc. Agriculture is thus a way of life rather than a commercial

proposition. Due to the absence of irrigation, improved agricultural practices have not made much headway. The area is agro-climatically suited for horticulture. The fruits grown are apples, walnuts, pears and peaches. But in the absence of transport and communications and storage facilities, the fruit production has not shown any significant progress. Whatever the local produce is generally sold locally at marginal price to the traders who have their agents in the area. The technical guidance on picking, packing and grading of fruits is not adequately available at present. There is only one progeny-cum-demonstration orchard. No canning units have so far been set up in the area. The surplus skull fruits cannot, therefore, be utilised for preparing jams, jellies and squashes, etc.

6. The role of cattle wealth has been significant in the tribal economy of the area as the cattle provide valuable draught power and manure for the agricultural operations. Sheep are reared for wool and goats for meat and wool purposes. According to 1966 livestock census, there were 69,708 sheep and 35,595 goats. But the average yield of wool is low and quality poor. It has, therefore, been the endeavour of the Government to improve the progeny and increase the wool production by cross-breeding for which the rams of imported Rambouillet or Merino breed are being supplied on subsidized rates. The raw wool is, in general, sold outside during the period of migration to the agents of the factories for the reason that there is no market in or around the area. However, a good part of the yield is retained for making blankets, *patties* and *pattus* for domestic use. Of late, the Himachal Pradesh Khadi and Village Industries Board has started purchase of wool in the area. Therefore, collecting centres should be set up in the area so that the breeders could get reasonable prices and are saved from distress sales of wool outside the State. The local indigenous cow matures late and the dry period is longer as compared to cows in the plains. For upgrading the breed of cattle with Jersey graded bulls, the Government has been making available the facility of stud bulls free of charge or on subsidized rates.

7. Although raw materials such as wool, fruits, timber, medicinal herbs and minerals are adequately available in the area, no organised industries have been set up for the reasons that the infra-structure e.g. transport facilities, skilled labour, machinery and equipment and power are not available. By the end of 1971-72, six villages viz., Bharmour, Sechun, Gosan, Sani, Malkuta and Bani were electrified through a micro-hydel power house constructed in 1962 at a cost of about Rs. 80,000. In the month of April, 1972 another micro-hydel power house of 50 kw installed capacity to electrify nine villages has been commissioned. Thus of the 106 inhabited villages, only 15 villages have so far been electrified. Spinning and weaving of wool, flour grinding, tailoring and carpentry are the cottage and household industries to cater to the local needs. There are no arrangements for imparting technical training to the people so as to enable them to organize these units on better scale. Moreover, the general economic condition of the people being poor, they have little finances for investing on these units.

8. The physical and mental health of the people is poor. Insanitary living conditions, mal-nutrition, age-old beliefs and dependence on the blessings of chellas and, above all,

migratory nature of the population have created health problems. One Primary Health Centre at Bharmour with three sub-centres at Dhar, Khani and Holi and six ayurvedic dispensaries were functioning in the year 1970-71. Besides, a diagnostic-cum-treatment centre for V.D., a leprosy centre and two maternity and child welfare centres were in existence. These institutions mostly housed in private buildings are inadequate to cater to the needs of the people.

9. According to 1961 census, the literacy percentage of this area was 7.4 which is pretty low when compared with 13.4 per cent for the district. This is due to poverty, migratory character of the people and the old traditions and customs against the education of the children. Before merger of the erstwhile princely State there were only 3 primary schools (two-boys schools at Bharmour and Ranuh-Koti and one girls school at Bharmour). The Government has gradually extended the facilities and by the end of 1970-71, there were 2 high schools, 6 middle schools and 65 primary schools besides a number of mobile institutions for educating the children during migration period. These institutions have failed to attract many students as these are (i) distantly located, (ii) housed in private *kacha* buildings, (iii) ill-equipped and (iv) lack in willing teachers because of hard working conditions in the area.

10. Housing problem is quite alarming as there are *kacha* houses built with mud stone and timber with slate roof having no provision for ventilation and sanitation. Generally, the animals are kept in the same room which is used for human dwelling. Due to migratory nature of population and poverty, periodical repairs are not carried and the houses are, by and large, in dilapidated condition. Although the welfare department has been advancing loans and subsidy for house sites and construction yet the people do not seem to be conscious of a better living.

11. The protected water supply is another problem faced by the planners as the people have to fetch water as head load from distant sources. The hilly terrain, lack of communications and the cost involved in supplying water from far off sources have stood in the way of any ambitious programme being taken up by agencies like Public Works Department, Welfare Department and T.D. Block. So far, protected water supply is available in about 30 per cent of the villages only.

12. There is no denying the fact that with a view to tackling the above economic and social problems a long-range strategy for development is needed. Of late, more stress is being laid on balanced development of different parts of the country so that the benefits of development could also reach the more backward regions. In this context, a Working Group has been constituted to formulate detailed area development programmes for areas like Bharmour with special problems by attaching priorities to programmes in the field of agriculture, horticulture, community development, minor irrigation, local development works, power, transport and communication, water supply, training institutions and expansion of village and small scale industries. The strategy adopted by the Working Group is:—

- (i) to provide roads which may help to transport man and material immediately and for the purpose, mule and jeepable roads have been recommended to be developed with the available resources;

- (ii) in the field of rural electrification, till more micro-hydel power stations are possible to be installed, the capacity of the Bharmour and Gharola Power Houses be increased to cater to the need of the people. It is, therefore, proposed by the Himachal Pradesh State Electricity Board to increase the capacity of Bharmour Power House from 20 kw to 100 kw and that of the Gharola Power House from 50 kw to 100 kw;
- (iii) for development of agriculture, the main bottleneck of non-availability of irrigational facilities is to be over come. With the position obtaining at present, in the area, it has been proposed by the Department of Agriculture to introduce sprinkler irrigation in some areas. But this too does not sound a workable scheme. Little seems to be possible for making available the water for irrigation. However, for adoption of improved agriculture practices, improved seeds and fertilizers could be supplied to increase the agricultural production;
- (iv) the development of sheep rearing should be undertaken on priority basis so as to improve the quantity and quality of wool. For this purpose measures like cross breeding are essential to improve the progeny. Further, the breeders are to be assured of a reasonable price for the product so as to prevent them from selling the wool outside the State by setting wool collection centres at convenient places in the area;
- (v) improved tools and implements may be supplied to the artisans to organise the household industries on better lines. The people could be encouraged to manufacture blankets, *patties* and *pattus* for commercial purposes and co-operative societies be organised for financial assistance and for the sale of products. Besides, the small scale units of *dhoop* making, furniture making, canning units should be encouraged as these can supplement the already meagre incomes of the populace;
- (vi) social services like environmental sanitation, ventilated houses and protected drinking water supply be ensured. Trained and willing medical personnel with adequate incentive like higher emoluments, free accommodation, etc. and properly equipped medical institutions, with indoor facilities and adequate medicines be made available in the area. Health education be imparted to the people so that their outlook on life is changed and they are able to shed their age-old traditions and customs. Loans and subsidy for construction of good houses may be advanced liberally. Scheme for model villages may also be introduced. Adequate funds are required for providing safe drinking water which the people have yet to fetch as head-load from distant sources.

PANGI SUB-DIVISION

13. The Pangi sub-division has an area of 2304.8 square kilometres inhabited by 13,824 persons of which 90 per cent belong to Pangwala and Bhot tribes. The entire area is

mountainous with altitude ranging between 7,000 feet to 21,000 feet above sea level. The area is one of the most difficult and remote and remains cut off from the rest of the world for about 5 to 6 months due to heavy snowfall during winters. The region is accessible mainly through Sach pass, (at an altitude of about 15,000 feet in Chamba district) through Rohtang pass (at an elevation of about 13,000 feet in Kulu district) and through Kistwar in Jammu and Kashmir. The approach to the area is still difficult and risky because of the facts that the high passes and snow bound hills are to be covered on foot and no arrangements exist for transportation through motor or jeep vehicles. The headquarter of the Pangi Sub-Division is located at Kilar.

14. Though the life in the area is in general hard yet the winter poses manifold problems to the people of the area. People are confined to their houses and depend upon stored food grains for which necessary provision is made in advance. Animals are provided stall-feeding as the pasture and grazing lands are covered with snow. Therefore, people remain idle during winters and have no work except spinning and weaving of wool. When spring sets in, the people scatter earth over the remaining heaps of snow to melt it and clear the ground for ploughing and sowing.

15. The main occupation of the people is agriculture. The spinning and weaving forms the main subsidiary occupation. Men, women and children work jointly in the fields all over the valley and hiring of agricultural labour is not in vogue. The important cereals grown are wheat, barley, and other millets such as *phulan*, *bres* and *elo*. The average yield per acre is very low and most of the produce is consumed by the farmers themselves. The *kuth* which is mainly produced in the Mear Nallah sub-valley is sold to the traders of Lahaul and Spiti district.

16. The topographical conditions of the area pose a challenge to the development of transport and communications. Heavy snowfall for about 6 months in a year results in limited working season and the problem of carriage of heavy machinery and equipments for construction of roads have stood in the way of development of transport and communications. The total road length by the end of 1970-71, was 16 kilometres motorable, 17 kilometres jeepable and 61 kilometres less than jeepable. These roads connect Lahaul and Spiti district with Jammu and Kashmir *via* Thirote-Udaipur-Kilar-Dharwas and Luj. A road is being constructed from Chamba beyond Banjaru and has 51 kilometres jeepable road length upto Satrundi, the last village on the foot of Sach Pass. The possibilities of making this road fit for heavy vehicular traffic are remote. The internal communication from one village to another is through dangerous footpaths, *trangiris* and, at some places, *jhulla* crossings. The carriage of goods is mainly as headload or on sheep and goats. The area is thus remote, inaccessible and backward.

17. According to 1961 Census, the percentage of literacy was only 8 per cent which was quite low when compared with the 13.4 per cent for the district and 21.3 per cent for the

State. During the princely regime there was only one primary school at Kilar. Since then, however, efforts are being made to extend the educational facilities in the area. As a result, by the end of 1970-71, there were 2 high schools, 4 middle schools and 35 primary schools functioning in the sub-division besides 24 schools started by Pangi block. The Welfare Department provides aid to the students for stationery and free tuition and free text books. Despite all these facilities, the education of children is not popular as the institutions are scattered and distantly situated. Children perform agricultural operations and subsidiary occupations like weaving and spinning, grazing of animals etc. and the people are economically backward and cannot afford hired labour for the purpose. The climatic conditions, too, do not permit the parents to send their children to schools. Trained and willing teaching personnel are not forthcoming to serve in the hard and trying conditions. The schools are housed in private *kacha* buildings and are ill-equipped. There is no arrangement for technical or higher education.

18. About 90 per cent of the total land area is under pastures and other grazing lands, and the net area sown forms about one per cent of the total geographical area according to the revenue records for 1970-71. The principal crops are wheat, barley and other millets. Paddy is not grown. The average yield per acre is very low as the size of the slopy holdings is small, primitive methods of cultivation are practised and the working season is limited (as mostly one crop is harvested). Due to the above, it has not been possible to make any break through in the development of agriculture. The area is thus deficient in foodgrains.

19. Irrigational facilities are adequately available as the *kuhls*/channels get water from perennial snow-fed streams. About 50 per cent of the net area sown is irrigated. Thus the possibilities of increasing the agricultural production are there if the people take to improved agricultural practices. But, the cost of transport of the improved seeds and fertilizers is high and beyond the reach of the common people.

20. The agricultural operations are solely dependent on animals. The general health of the cattle is poor and productivity low. According to 1966 livestock census, there were 8,973 cattle, 22,954 sheep, and 5,574 goats. Horses, mules and buffaloes are almost unknown in the area. Sheep and goats are reared for wool and meat. The wool is used for manufacture of blankets and *patties* and goat hair for *thobi*. The bedding and clothing requirements of the people are generally met from home products and thus spinning and weaving is a common household industry. Unlike the Gaddis of Bharmour, the population keeps the wool for their own consumption and does not sell it as only a few of them migrate to plains or lower hills during the winter.

21. There are no medium or large scale industries in the region. Small scale units like spinning and weaving, flour grinding, carpentry and tailoring are carried on as household and cottage industries. Electricity is unknown to the people and there are no immediate prospects of making it available even for domestic use. Lack of means of transportation and

communications, technical know-how, and assured returns for want of marketing facilities, besides the general poverty of the people, have not allowed any industrial growth. Even the existing units use primitive methods and the people take them as an off-season exercise.

22. The health of the people, in general, is poor due to malnutrition and lack of protein-rich diet. Drinking is a common habit among men and women. By 1970-71, the area was being served by one primary health centre at Kilar with 3 sub-centres one each at Dharwas, Karyas and Sach, 4 ayurvedic and 2 allopathic dispensaries along with two maternity and child welfare centres. Health education has been lacking among people for the reasons that age-old beliefs, traditions and customs, illiteracy and poverty have hampered the health education programme's extension. Housing problem poses a threat to health and efficiency. The houses built of wood are dingy and not properly ventilated and surroundings too are insanitary. The houses are also shared by cattle and there are no separate kitchens and bathrooms and thus environmental sanitation is lacking. Drinking water facilities are generally available as the villages are situated at places where natural water sources are available. Moreover, the Government agencies, mainly T.D. Blocks have laid pipe lines for water supply and the water is available within one to two miles radius. However, during winter the people face acute shortage of water as the sources are snow covered.

23. A glance through the problems of the area will reveal that the Pangti region is very remote, inaccessible and backward and the living conditions of the people are hard. With a view to bring their living standard to the level of others in the district, the immediate requirements have to be attended to on priority and a strategy for improving the socio-economic lot through development of agriculture and allied occupations, industry, education and public health etc., will have to be evolved.

24. The first and foremost need of the area is the development of roads. Besides a jeepable road of 51 kilometres in Churah tehsil to feed Pangti valley on the Chamba side, the existing road length of about 16 kilometres motorable, 17 kilometres jeepable and 61 kilometres less than jeepable in the valley is absolutely inadequate in view of the geographical area of the region which according to 1961 census was 2304.8 square kilometres. There are no regular approach roads to the valley and only narrow and dangerous paths exist. The area is being served by two Divisions of the Himachal Pradesh Public Works Department namely Chanab valley Divisions with headquarters at Udaipur (Pangti) and the Churah Division with headquarters at Chamba. To link Kilar with Chamba *via* Tissa, Satrundi and Bindra Bani, the Churah Division has completed 51 kilometres jeepable road up to Satrundi. For further distance of about 35 kilometres by foot path upto Kilar, there is a proposal for the construction of a jeepable road at a cost of about Rs. 37 lakhs. The proposal, if approved, may take four to five years for completion of the road. The Chenab Valley Division is already working on the road to link Lahaul-Spiti district with Jammu and Kashmir *via* Thirote-Udaipur-Kilar-Dharwas-Luj. The present length of this route is 70 miles. The construction work started on this road several years back, has been impeded by natural factors like heavy

snow-fall, limited working season and the topography of the area. Till the valley is open for vehicular traffic, which is a remote possibility in the near future, the existing foot-paths need be widened and maintained properly.

25. For the development of agriculture, consolidation of holdings is needed. Irrigational facilities are adequate, though not sufficient and efforts are required to extend the existing facilities. Due regard having been given to the prevailing traditions and customs, the outlook of the people on agriculture, which is more of a way of life rather than an economic proposition, will have to be changed. However, natural hazards like heavy snow-fall, slopy land, limiting working season will remain a permanent feature. Horticultural development, to a greater extent, may relieve the dependence of cultivators on agriculture. Agro-climatic conditions are suitable for growing fruits like apple, grapes, walnut, *chilgoza*, pears and peaches. The pasture land to some extent could be converted into horticultural land provided the means of transport are available.

26. In the formulation of any plan for Pangi valley with its agro-pastoral economy, improvement of livestock needs to be given high priority. Castration of scrub animals, opening of key village centres, improvement of breeds are the immediate requirements of the area. Mechanisation of agricultural operations is not possible and thus the cattle have to play an important role by making available the draught power, manure and protective food and providing a subsidiary occupation. The progeny of sheep is to be improved through cross breeding by rams of improved breed. This will increase the wool production and improve its quality. The people thus will be able to get their already meagre income supplemented by manufacturing the wool products at a large scale which at present are kept only for domestic use. For encouraging the spinning and weaving units, the people may be advanced loans on easy terms through co-operative institutions and provide the pre-requisites such as improved implements and tools for modernising the existing units. Steps should also be taken to get the products marketed through the co-operative societies. The prospects of establishing large and medium industries are remote for the reasons that the means of transport, power, skilled labour and marketing facilities are lacking. However, a scheme for power generation on Kilar Nallah is under investigation. Systematic exploitation of medicinal herbs may also be undertaken. Hops is a herb which is available wild. It is used in breweries and if exported may fetch a handsome price.

27. In any strategy for development of the region, education occupies a significant place. The very objective of development will be defeated if the people are not prepared to shed illiteracy and superstitions. For this, the light of education to understand the things in their right perspective, is to be provided so that the people shun their apathy towards a new life and co-operate in the development programmes and schemes. The educational institutions should be well equipped with teaching personnel and other pre-requisites. Hostel facilities for students and free residential accommodation for the teachers may be provided. Reorientation and recasting of the syllabus, in view of the limited working period, is also

necessary. The opening of institutions, close to each village should be taken up so that the people could send their children to schools.

28. Medical aid should be provided to the remotest parts of the region. The existing institutions are inadequate to meet the needs of the people. Sufficient stocks of medicines and posting of trained and willing hands be taken up. Efforts to canvass health education on large scale be undertaken so that the physical and mental growth of the people is ensured. For construction of ventilated and sanitary houses, liberal loans be given to the people and model residential quarters built by the government agencies.



NATURAL RESOURCES OF HIMACHAL PRADESH

—M. L. Kapur,
*District Statistical Officer,
Mandi District, Himachal Pradesh.*

Himachal Pradesh with an area of 55,673 square kilometres is larger than Punjab, Haryana, Kerala, Manipur, Tripura and Nagaland. Its population is 34,60,434 which is more than the population of Manipur, Tripura, Nagaland or Meghalaya. The topography of the State is rugged and the terrain is almost mountainous. Altitude varies between 460 metres and 6,400 metres above mean sea level. According to physiography the territory can be divided into (i) Outer Himalayan, (ii) Inner Himalayan and (iii) Alpine pasture regions. The rainfall varies from 152 to 178 cms in the first region and from 76 to 102 cms in the second region. The third region generally remains under snow for about 5 to 6 months in a year.

2. The soils of the State have been classified into five zones viz., (i) low hill soil zone, (ii) mid-hill soil zone, (iii) high-hill soil zone, (iv) mountainous soil zone, and (v) dry hill soil zone. The first zone covers areas up to an altitude of 900 metres above sea level. The soils of this zone which are not very deep and are embedded with stones, are suitable for the cultivation of maize, wheat, sugarcane, ginger, paddy and citrus fruits. The second zone (mid-hill soil zone) covers areas lying between 900 metres and 1500 metres above sea level. The soils of this zone are loam to clay loam in texture and greyish brown in colour and are suitable for the cultivation of table potatoes, stone fruits, wheat and maize. The high hill soil zone covers areas lying between 1,500 metres and 2,100 metres above sea level. The slopes in this region are steep and are suitable for the cultivation of seed potatoes and temperate fruits. The mountainous soil zone covers areas between 2,100 metres to 3,000 metres above sea level and its soil texture is silty loam to loam with dark brown colour. In the dry hill soil zone the monsoon rainfall is almost negligible. The soil is of high texture with variable soil fertility and the area is suitable for the cultivation of dry fruits.

NATURAL RESOURCES OF HIMACHAL PRADESH

3. An authoritative and comprehensive definition of the term "natural resources" has been given by a United Nations Committee of experts as:

"A natural resource is anything found by man in his natural environment that he may in some way utilize for his own benefit. In this broad sense, the resources provided by nature include the rocks in which are contained mineral ore, energy sources (oil, coal, uranium, gas) and other useful products (ground water, building stones, etc.). They include the soils which nourish the plants, as well as all plant and animal life. They include the elements of the landscape which provide sites for building roads, railways and other structures. They include surface and underground waters which are indispensable to human, animal and plant life. Water also provides a source of energy through hydro-electric power, a means of transport, and a setting for sports and tourism. Natural resources include the air and everything that constitutes the atmosphere or reaches man by way of the atmosphere, such as the solar radiation, which is essential to life".

The extent of affluence or poverty in any economy thus depends largely on the extent of utilization of available natural resources and their exploitation.

4. Himachal Pradesh possesses vast natural resources which have not been exploited fully so far. An account of important resources in this Pradesh has been given in the subsequent paragraphs.

LAND UTILIZATION

5. Land constitutes the most important natural resource of any region which not only provides the basis for economic activity but is the main factor for the very existence and development of the community. According to 1971 census, population of Himachal Pradesh constitutes only 0.63 per cent of total population of India whereas its geographical area forms 1.7 per cent of total area of the country. The density of population is 62 per square kilometre as against 134 for the country as a whole. Though the overall density is low, yet the pressure on cultivated area is very great. According to the land statistics, as given below, only 21 per cent of the total area of the Pradesh is cultivated as against 52 per cent at the all-India level.

TABLE 1—LAND UTILIZATION

Classification of area	Total area 1967-68 (’000 hectares)	Percentage to total area
1	2	3
1. Total geographical area according to village papers	2,911.51	100.00
2. Forests	633.86	21.7
3. Not available for cultivation	316.78	10.9
4. Other un-cultivated land excluding fallow land	1,351.06	46.4
5. Fallow land	63.22	2.2
6. Net area sown	546.59	18.8

Similarly, net area sown is about 19 per cent of the total geographical area as compared to 45 per cent sown area for all-India. The population-land ratio works out to 5.6 persons per hectare in Himachal Pradesh against 3.2 persons per hectare at the all-India level. This indicates that more stress has to be laid on intensive cultivation in this Pradesh rather than extensive cultivation.

✓ HORTICULTURE

✓6. Agriculture is no doubt the mainstay of the people of Himachal Pradesh but of late considerable emphasis has been laid on the development of horticulture. This shift in the emphasis has been mainly because of (a) higher income per unit area as compared to the cultivation of cereals, (b) utilisation of areas otherwise unsuitable for growing ordinary crops, (c) soil conservation measures and (d) indirect economic benefits like the manufacture of packing cases, setting up of fruit preservation and cold storage units and making available a large employment potential in related jobs. Favourable agro-climatic conditions prevailing in the Pradesh offer vast scope for the development of horticulture which will go a long way in supplementing the otherwise meagre income of the people, thereby ameliorating their economic conditions. In recent years the State has taken big strides in horticulture and has earned a name as a producer of quality apples, peaches, plums and other fruits. During 1970-71, an area of 44,130 hectares was covered under fruits of which 26,615 hectares were under apples alone. The production of fruits during the period was 1.49 lakh tonnes of which 1.03 lakh tonnes were apples. In this context, a World Bank Project for the marketing and processing of apples in Himachal Pradesh having an initial investment of Rs. 112.750 million in the first phase of three years and to be financed by the International Bank for reconstruction and Development was discussed with the World Bank mission in September, 1971. This project when materialised will ease the marketing problems of this perishable commodity to a consi-

derable extent. This will boost up the development of horticulture and will further benefit the apple growers in the Pradesh.

FISHERIES

✓7. Himachal Pradesh has vast scope for the development of mirror carp which is an exotic variety in the confined waters in sub-mountainous regions and for the propagation of trout fish in running waters in mountainous regions. The Pradesh is rightly called anglers' paradise and offers great scope for satisfying anglers' craze for trout. Of 600 kilometres of river length which can be developed into trout waters, nearly 360 kilometres is already under planned development.

ANIMAL HUSBANDRY

✓8. Livestock population in Himachal Pradesh was about 42 lakhs according to figures available from 1966 census. But from the qualitative aspects the position is not very encouraging as the milk yield per milch cattle is significantly low as compared to other parts of the country. Efforts are being made to develop the local cattle by crossing them with improved breed bulls which have to be even imported from abroad. Under the Intensive Agricultural Development Programme which was launched in Mandi district in the year 1962 in collaboration with the Federal Republic of Germany a dairy plant with a capacity of 10,000 litres per day has been established near Mandi town. Similarly, there were about 10.5 lakh sheep of different breeds in this Pradesh according to 1966 livestock census. These are the backbone of the woollen industry and the Pradesh is known for *shawls* making which is a traditional art in the area. Kulu *shawls* which have their distinct design have earned a market of its own in the country. For the development of sheep, five sheep breeding farms are presently functioning in the Pradesh. Various breeds of sheep such as Polwarth, Spanish, Merino, Rambouillet and Russian merino have been imported from abroad in order to improve the local breeds of sheep like Rampur Bushahri and Gaddi. There is, thus, vast scope for making animal husbandry a profitable industry which is bound to ameliorate the economic conditions of the people in the Pradesh.

FORESTS

✓9. According to the figures released by the Forest Department about 38.5 per cent of the total geographical area of Himachal Pradesh is covered under forests which is not very encouraging if viewed in the background of National Policy of the country which lays down that in hilly tracts like that of this Pradesh, 60 per cent of the total geographical area should be covered under forests. Efforts are, therefore, being made to bring more and more areas under forests so as to come up to the level laid down in the National Policy as above. Percentage classification of forests according to legal status is given in Table 2.

TABLE 2—CLASSIFIED AREA UNDER FORESTS

Category of forests					Percentage to total forest area
1.	Reserved forests	..	..	..	8.63
2.	Demarcated protected forests	..	..	..	25.73
3.	Undemarcated protected forests	..	..	..	54.85
4.	Unclassed forests	..	..	..	3.80
5.	Other forests	..	..	..	1.91
6.	Forests not under the control of Forest Department	..	..	..	5.08
TOTAL					100.00

10. On the basis of composition, the forest of the Pradesh can be broadly classified into coniferous forests and broad leaved forests. *Deodar kail, chil*, spruce, silver fir and *neoza* pine are the coniferous species. *Neoza* pines which produce edible nuts grow in the border district of Kinnaur which are the only forests of *neoza* in India. Among the broad leaved species, *sal, ban, oak, mohru oak, kharsu oak*, walnut, mapple, birdcherry, horse chestnut, poplar, *seemal, tun* and *shisham* are the important species which grow in these forests. Forests area under important species growing in the five river basins viz., Ravi, Chenab, Beas, Sutlej and Yamuna basins has been shown below:—

TABLE 3—SPECIE-WISE AND BASIN-WISE AREA

Item	Area in hectares under different species in river basin					
	Ravi	Chenab	Beas	Sutlej	Yamuna	Total
1	2	3	4	5	6	7
SPECIES:						
Deodar	8,184	3,142	11,927	27,997	18,622	69,872
Kail	7,000	3,904	17,632	22,811	35,097	86,444
Silver fir/Spruce	32,634	1,733	44,750	26,855	41,972	1,47,944
Chil	15,522	—	32,705	45,395	21,058	1,14,680
Sal	—	—	—	—	26,112	26,112
Ban Oak	3,032	—	23,845	8,131	21,288	56,296
Mohru Oak	—	—	—	607	1,408	2,015
Kharsu Oak	3,616	—	29,693	6,151	17,240	56,700
TOTAL	69,988	8,779	1,60,552	1,37,947	1,82,797	5,60,063

11. Coniferous forests provide wood which is an excellent raw material for the manufacture of a number of wooden products and there is a large growing stock of some of the important species in the Pradesh as shown in Table 4.

TABLE 4—BASIN-WISE GROWING STOCK OF IMPORTANT SPECIES

Item	River basin-wise growing stock of important species in thousand cubic metres						Total	
	Ravi	Chenab	Beas	Sutlej	Yamuna			
	2	3	4	5	6	7		
SPECIES:								
Deodar	..	..	1,396	405	1,779	3,584	4,765	11,929
Kail	..	..	933	343	1,941	3,522	5,846	12,585
Silver fir/Spruce	..	..	4,880	664	11,013	8,206	12,613	37,376
Chil	..	..	496	—	1,917	2,886	1,230	6,529
Sal	..	..	—	—	—	—	3,011	3,011
Ban Oak	..	..	22	—	2,027	744	1,956	4,749
Mohru Oak	..	..	—	—	—	145	363	508
Kharsu Oak	..	..	44	—	2,078	425	1,865	4,412
Mapple	..	..	—	—	25	96	246	367
Bird Cherry	..	..	—	—	32	61	172	265
Walnut	..	..	—	—	19	80	76	175
Horse chestnut	..	..	—	—	32	67	71	170
TOTAL			7,771	1,412	20,863	19,816	32,214	82,076

12. Great stress has to be laid on the scientific and improved methods of wood extraction and an estimate of annual yield of some of the important species in respect of the five river basins in Himachal Pradesh has been as given below:—

TABLE 5—YIELD OF IMPORTANT SPECIES

Item	River basin-wise annual yield of important species in cubic metres						Total
	Ravi	Chenab	Beas	Sutlej	Yamuna		
SPECIES:							
Deodar	15,207	4,573	8,485	18,614	27,692	74,571	
Kail	10,864	6,187	10,931	20,802	36,140	84,924	
Fir/Spruce	61,720	8,566	74,496	75,503	1,08,707	3,28,992	
Chil	3,220	—	12,827	18,593	6,472	41,112	
Sal	—	—	—	—	11,300	11,300	
TOTAL ..	91,011	19,326	1,06,739	1,33,512	1,90,311	5,40,899	

13. *Chil* trees are tapped for obtaining resin which is further processed to get rosin which is of great commercial value. In Himachal Pradesh two Rosin and Turpentine Factories have been established one at Nahan and the other at Bilaspur. An account of resin extracted by different agencies and its value during 1967-68 alone which provide an idea about the extent of availability of this important raw material is given below:—

TABLE 6—RESIN EXTRACTED

Item	Resin extracted by Government agency	Resin extracted through purchasers	Total
1. Quantity of resin extracted (in quintals) ..	42,904	1,01,234	1,44,138
2. Revenue collected ('000 Rs.) ..	5,663	3,392	9,055

14. Besides, forests in this Pradesh are rich in medicinal herbs as well as aromatic plants which have a good market and are in great demand by pharmaceutical and perfumery industries. Important medicinal herbs include dioscorea, belladonna, *banafsha*, *mushakbala*, pattish, *harsu* white skimia lowreola oil, valariana wallichu, *kuth* and cedar wood oil are important ingredients in perfumery industry.]

RIVERS AND HYDRO-POWER

15. Himachal Pradesh has the privilege of perennial rivers flowing through all the districts. The five important rivers viz., Chenab, Ravi, Beas, Sutlej and Yamuna flow through this Pradesh. The head waters of Chenab, Chandra and Bhaga rivers rise in the Lahaul area. The rivers Chandra and Bhaga unite and then the river Chandra Bhaga flows through Chamba district for about 100 kilometres and then enters the State of Jammu and Kashmir where it is named Chenab. River Ravi also rises south of Chandra from Baughahal basin. Firstly it flows westwards through a trough, separating the Pir-Panjel from the Dholadhar range, thereafter turning southwards enters the plains of Punjab. The river Beas starts from Beas Kund at Rohtang pass in the Pir-Panjel range and enters Punjab after traversing a distance of about 70 kilometres. Parbati and Uhl are the two main tributaries feeding this river. The Sutlej is the largest of the five rivers and flows through five districts of Himachal Pradesh viz., Kinnaur, Solan, Bilaspur, Mandi and Kangra before it enters the plains of Punjab. Spiti and Baspa are the two main tributaries of this river. Similarly Tons and Giri flowing south eastwards are the two main tributaries of Yamuna river which flows on the south-east side of Sirmur district. All these rivers are snow-fed and are thus perennial. In addition, the natural reservoirs and large drops available along the courses of these rivers provide vast potentiality for the generation of hydel power, which is estimated at about 8.5 million KW (as per details given below) and accounts for approximately one fifth of the estimated power potential for the Indian Union.

TABLE 7—ASSESSED POWER POTENTIAL

Name of the river					Assessed power potential (million K.W.)
Sutlej	..	..	..	..	3.5
Beas	..	..	..	..	3.0
Yamuna	..	..	..	..	0.8
Chenab	..	..	..	..	0.7
Ravi	..	..	..	..	0.5
TOTAL					8.5

16. A preliminary hydro-power potential survey of the water resources of the Pradesh reveals that 31 “run of the river” schemes and 13 storage schemes can be planned and developed on these river systems. In order to assess the economics of these schemes a systematic programme of investigations, planning and feasibility studies has been taken up since 1964.

17. Speedy implementation of hydro-power generation schemes is of paramount importance firstly because of the fact that the postponement of the development of hydel resources will lead to an irretrievable loss of these perennial resources. In this background, the Himachal Pradesh Electricity Board has recently been set up to accelerate the work with regard to the completion of various hydel projects in the State. The following projects are currently under execution in the Pradesh:—

1. Giri Hydel Project Stage-I.
2. Uhl Hydel Project Stage-II.
3. Nogli Power House Extension.
4. Rukti Micro Hydel Scheme.
5. Gharola Micro Hydel Scheme.
6. Sissu Micro Hydel Scheme.

18. The Giri project in Sirmur district is estimated to generate 60 Mw of power and provide irrigation potential for over 5,000 hectares of fertile land in Paonta valley. Similarly, the Uhl project Stage-II located at Jogindernagar utilises the tail race waters of existing Shanan Power House for power generation and all the three units of 15 Mw capacity each have since been commissioned. In addition, detailed investigations are currently under progress in respect of (a) Parbati hydel project in Beas basin, (b) Chamera hydel project in Ravi basin, (c) Thirot/Gyspa dam project in Chenab basin, (d) Dadahu dam project in Yamuna basin and Nathpa-Jhakri, Baspa, Bhaba and Kol dam projects in Sutlej basin. All these projects when completed will earn rich dividends for the State and will go a long way in increasing the State and per capita income of its teeming millions.

MINERALS

19. Important minerals of the Pradesh include salt, slate, limestone, gypsum, byrites, dolomite and pyrites. While Mandi district is known for rock salt deposits, gypsum is found in Sirmur district and good quality slate quarries are found in Mandi and Chamba districts. Similarly, copper, iron ore, lead, phosphates and several other minerals are available in the Pradesh which deserve proper investigation and surveys so as to form the basis for future development of industries connected with mines and minerals. For this purpose a Geological Wing was established in 1966 which has undertaken detailed investigations of gypsum deposits in Sirmur district, dolomite and limestone deposits in Bilaspur district and preliminary investigations of silica sand in Bilaspur district and of clay deposits in Kangra district. Based on these mineral deposits, a cement plant at Rajban in Sirmur district has been sanctioned by the Government of India. This plant with a capacity of 600 tonnes of cement per day will be in the public sector. During the year 1971, total production of major and minor minerals in the Pradesh has been about 37,170 tonnes and 2,00,000 tonnes, respectively.

INDUSTRIALISATION

20. Vast natural resources coupled with excellent labour management relationship, cheap power and land provide favourable conditions for the setting up of both traditional as well as non-traditional industries in the Pradesh. But at the same time the progress receives a serious set-back in the shape of lack of adequate transport facilities for the transportation of raw materials on the one hand and finished products to the market places on the other hand. However, concerted efforts have been made and the Pradesh has developed manufacturing capacity for the setting up of a large number of sophisticated and highly skilled products. Items like watch parts, epidiascopes, microscopes, thermometers, etc., are being manufactured though are not on a very large scale. Extensive forest areas offer scope for the setting up of forest-based industries in the Pradesh. In this regard negotiations have been completed and an agreement has been signed with an Indian firm in April, 1971 for the setting up of a multicore newsprint factory in the Sutlej-Beas basin which will produce 200 tonnes of newsprint every day. This will result in saving foreign exchange worth about Rs. 8 crores annually and will provide sustained employment to about 10 thousand persons. Similarly, the raw material available locally from the two Government Rosin and Turpentine Factories at Nahan and Bilaspur offer great potential for the development of camphor and pine oil factories in the Pradesh and negotiations are in progress with interested parties. In order to provide a fillip to the sheep rearers and to generate employment potential one shoddy wool spinning plant has already been commissioned in Sirmur district and efforts are being made to set-up a 2,800 spindles woollen mill as also a 2,400 spindle worsted plant in the Pradesh.

ECONOMIC ANALYSIS OF HIMACHAL PRADESH STATE GOVERNMENT BUDGET 1971-72 (R.E.) AND 1972-73 (B.E.)



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The final products absorbed by an economy consist of consumption and capital formation. The expenditures of individuals and institutions for these purposes are basically financed out of the incomes which arise in the production of these products. Actually, however, this circular flow of incomes and expenditures forms a complicated net work of commodity and money flows determined by the structure of the economy. It is convenient to follow these financial flows by considering in turn private consumption expenditures, general Government consumption expenditures and capital formation.

2. The regional accounting aims at describing the structure of an economy and the way in which its parts and various aggregates are related. They form an essential tool of economic analysis and constitute the empirical correlates which describes the complex economic relationship between different sectors of economy and different forms of economic activity and also focus attention on a net work of economic transactions with a view to visualising the working of the economic system as a whole. It furnishes a description of the economic activity and the nature of complex economic relationship which govern the growth and form of an economic institution.

ECONOMIC CLASSIFICATION OF GOVERNMENT BUDGET

3. The final products absorbed by an economy are—consumption and capital formation. Consumption expenditure in turn relates to private consumption expenditure and general Government consumption expenditure. In a developing State, Government expenditure plays remarkable and substantial role in stepping up the tempo of economic activity to achieve economic and social justice. The impact of the budgetary operations of the Government on the flow of income, savings and capital formation cannot be directly read from the budget as presented to the legislature. The budgetary transactions have, therefore, to be reclassified and regrouped into meaningful economic categories in order to throw light on the economic

effects of the Government activity. The economic classification of Government Budget follows the technique of regional accounting and groups together similar types of transactions of the Government after eliminating all accounting transfers. Thus current transactions are distinguished from capital transactions and in both of these, transactions in goods and services are separated from transfers. Thus the economic classification groups different items of expenditure according to their economic character.

4. The economic classification of government accounts has been attempted by several countries during the past decade. In India, the Central Statistical Organisation, Government of India has been preparing economic classification of the budget of all public authorities and publishing it every year in the annual publication "Estimates of National Income" in the form of a set of three accounts. It was later attempted by Ministry of Finance, Government of India in respect of Union Budget for 1957-58 and since then it has been prepared every year. The economic classification of Government accounts is based mostly on generally accepted concepts, definitions and classifications developed in the field of national accounting. The United Nations in its report entitled 'A Manual for Economic and Functional Classification of Government Transactions, 1958' and 'A System of National Accounts and Supporting tables, 1964' has given the techniques in accounting frame work to provide international comparisons.

AN ECONOMIC ANALYSIS OF STATE GOVERNMENT BUDGET 1971-72 (R.E.) AND 1972-73 (B.E.) OF HIMACHAL PRADESH

5. Rising from the abysmal depths of poverty, ignorance and centuries of exploitation, this hill State of Himachal Pradesh has made its presence felt in the national canvas by its indefatigable crusade in a peaceful manner for asserting its rightful place. Himachal Pradesh became a full-fledged State on 25th January, 1971. In a developing State, like that of Himachal Pradesh, where Government expenditure plays a substantial role, it is imperative to identify impacts of Government transactions on the different facets of economy. The reclassification, therefore, becomes necessary for understanding the economic impact of Government transactions. In the present study, Himachal Pradesh Budget estimates for 1972-73 and Revised estimates for 1971-72 have been analysed to find out (i) total income generated by the State Government, (ii) gross capital formation, (iii) net capital formation out of the budgetary resources and financial assistance for net capital formation, (iv) gross and net savings, (v) current receipts and outgoings, (vi) source of finance for deficit and (vii) net profits of departmental commercial undertakings. It would have been better to study these over a period of at least five years to find out the trend but the present study being a maiden attempt in this direction, the discussion here is restricted to only these two years viz., 1971-72 and 1972-73.

CONTRIBUTION TO THE GENERATION OF STATE INCOME BY THE GOVERNMENT

6. The budgetary operations of the State Government during the year 1972-73 are expected to generate a total income of Rs. 3,702 lakhs. According to the revised estimates

for 1971-72, such income generation works out to Rs. 3,540 lakhs. The various components of the income generation are given as under:—

TABLE 1—COMPONENTS OF INCOME GENERATION

		(Rs. in lakhs)	
Item 1		1971-72 2	1972-73 3
1. Wages and salaries income generated by Government administration ..		2,503	2,799
2. Net output of departmental commercial undertakings		525	381
3. Wages and salaries components of Government outlays on buildings and constructions		512	522
TOTAL INCOME		3,540	3,702

Net output of departmental commercial undertakings comprises of wages and salaries, interest and profit. As much as 33.3 per cent of the total expenditure on buildings and construction has been treated as wages and salaries. It would be seen that the income generated during 1972-73 has shown an increase of 4.5 percent over previous year.

GROSS CAPITAL FORMATION

7. The State Government's total expenditure which excludes departmental commercial undertakings viz., forests, irrigation, road and water transport, milk supply schemes, printing presses and electricity schemes places the total expenditure of the State Government at Rs. 6,926 lakhs in 1972-73. The corresponding expenditure for the year 1971-72 was of the order of Rs. 6,438 lakhs. The allocation by major types of expenditure is given as under:—

TABLE 2—COMPONENTS OF EXPENDITURE

		(Rs. in lakhs)	
Item 1		1971-72 2	1972-73 3
1. Final outlay:			
(a) Government consumption expenditure		3,443	3,730
(b) Gross capital formation		1,856	1,734
2. Transfer payments to the rest of the economy:			
(a) current transfers		857	899
(b) capital transfers		24	27
3. Financial investment and loans to the rest of the economy (net)		258	536
TOTAL EXPENDITURE		6,438	6,926

8. Of the total expenditure of Rs. 6,926 lakhs provided in the budget for the year 1972-73, Rs. 5,464 lakhs or 79 percent constituted the final outlays of the State Government. The corresponding percentage in respect of revised estimates of 1971-72 was 82 percent. This outlay represents the State Government's direct demand for goods and services for consumption and for capital formation.

9. The rest of the expenditure of Rs. 1,462 or 21 per cent of the total for the year 1972-73, represents disbursements by way of transfer payments, financial investment and loans to the rest of the economy and is intended to supplement its current and capital resources. The corresponding percentage of revised estimates for 1971-72 was 18 per cent.

10. Of the final outlay of Rs. 5,464 lakhs in 1972-73, Rs. 1,734 lakhs or 32 per cent are budgeted for gross capital formation by the State Government. This is Rs. 122 lakhs less than the revised estimate for 1971-72. This decline is attributed to the formation of State Electricity Board and, therefore, budget estimate of electricity schemes did not find place in the budget.

NET CAPITAL FORMATION

11. From the gross capital formation to be undertaken directly by the State Government, net capital formation i.e., net addition to the stock of fixed assets and other stock is budgeted at Rs. 1,734 lakhs for 1972-73. The corresponding net capital formation for the year 1971-72 was Rs. 1,852 lakhs. The net capital formation has been derived by deducting from gross capital formation the provision for expenditure on renewals and replacements. The components of total net capital formation are given as under:—

TABLE 3—COMPONENTS OF NET CAPITAL FORMATION BY GOVERNMENT

						(Rs. in lakhs)	
Item						1971-72	1972-73
1.	Construction works	..	..	...	..	1,538	1,566
2.	Machinery and equipment	..	..	..	..	137	174
3.	Net increase in stocks	..	..	..	..	177	(—)6
TOTAL CAPITAL FORMATION (NET)						1,852	1,734

12. In addition to the net capital formation directly undertaken, the State Government also assists rest of the economy for net capital formation. The allocation of such assistance is indicated in Table 4.

TABLE 4—GOVERNMENT ASSISTANCE FOR NET CAPITAL FORMATION

(Rs. in lakhs)

Item	1971-72	1972-73
1. Grants for capital formation	23	26
2. Loans and advances for capital formation	186	378
3. Investment in shares	118	119
TOTAL FINANCIAL ASSISTANCE FOR (NET) CAPITAL FORMATION	327	523

13. In aggregate, the State Government has provided Rs. 2,257 lakhs for net capital formation out of its budgetary resources during the year 1972-73. The corresponding amount provided in the revised estimates for 1971-72 was Rs. 2,179 lakhs. The details of the net capital formation by the State Government out of its budgetary resources are given below:—

TABLE 5—TOTAL CAPITAL FORMATION (NET) OUT OF BUDGETARY RESOURCES

(Rs. in lakhs)

Item	1971-72	1972-73
1. Net capital formation by the State Government	1,852	1,734
2. Financial assistance for net capital formation to the rest of the economy	327	523
TOTAL	2,179	2,257

The above table reveals that the outlay provided for net capital formation during 1972-73 was 33 per cent of the total expenditure of Rs. 6,926 lakhs. The corresponding percentage for revised estimates for 1971-72 was 34 per cent.

CURRENT RECEIPTS AND OUTGOINGS

14. In assessing the economic implications of Government expenditure, it is necessary to examine the source from which it is financed. The current receipts of the State Government under different significant economic heads are:—

TABLE 6—CURRENT RECEIPTS OF STATE GOVERNMENT

(Rs. in lakhs)

Item	1971-72	1972-73
1. Tax revenue	1,412	1,616
2. Income from property and entrepreneurship	163	136
3. Transfer from households	75	78
4. Revenue grants, contributions and recoveries	2,372	2,536
TOTAL	4,022	4,366

15. The current outgoings of the State Government for the years 1971-72 and 1972-73 are:—

TABLE 7—OUTGOINGS OF STATE GOVERNMENT

(Rs. in lakhs)

Item	1971-72	1972-73
1. Consumption expenditure	3,443	3,730
2. Transfer payments (interest, grants, subsidies and other current transfers) ..	857	899
TOTAL ..	4,300	4,629

GROSS AND NET SAVINGS

16. Gross savings by the State Government comprises savings of Government administration i.e. surplus of Government current receipts over Government current expenditure and depreciation provision of Government administration and departmental commercial undertakings. Net savings by Government are equal to gross savings less expenditure on renewals and replacements. As against the net capital formation i.e. net investment by the State Government of Rs. 2,257 lakhs in 1972-73, the net deficit in savings works out to Rs. 290 lakhs. The details of gross and net savings are:—

TABLE 8—GROSS AND NET SAVINGS

(Rs. in lakhs)

Item	1971-72	1972-73
1. Gross savings:		
(a) Savings of Government administration	(—)278	(—)263
(b) Depreciation provision of Government administration and departmental commercial undertakings	35	(—)27
Less:		
2. Expenditure on renewals and replacements	4	—
NET SAVINGS	(—)247	(—)290

DEFICIT

17. The deficit denoting the total requirements of finance for the State Government operations are:—

TABLE 9—DEFICIT

(Rs. in lakhs)

Item	1971-72	1972-73
1. Deficit in all transactions in commodities and services and transfers ..	1,795	1,785
2. Net increase in financial assets	258	536
TOTAL DEFICIT	2,053	2,321

The source of finance for deficit are indicated below:—

TABLE 10—SOURCES OF FINANCE FOR DEFICIT

(Rs. in lakhs)

Item	1971-72	1972-73
1. Net borrowings:		
1.1 Permanent debt (net)	—	—
1.2 Loans from the Central Government	1,281	1,480
1.3 Unfunded debt (net)	205	225
1.4 Other debt (net)	(—)100	(—)3
1.5 Other loans (net)	(—)3	33
1.6 Cash balance investment account (net)	—	—
1.7 Inter-State settlements (net)	(—)9	(—)24
2. Deficit financing:		
2.1 Increase in floating debt (net)	—	—
2.2 Withdrawals from cash balance	679	610
TOTAL	2,053	2,321

NET PROFITS OF DEPARTMENTAL COMMERCIAL UNDERTAKINGS

18. The departmental commercial undertakings considered are forests, irrigation, milk supply scheme, electricity, road and water transport. The net profits of departmental commercial undertakings i.e., the excess of gross receipts over operating expenses exhibits the financial results of the working of these undertakings. The derivation of the net profits is as in Table 11.

TABLE 11—NET PROFITS OF DEPARTMENTAL COMMERCIAL UNDERTAKINGS

(Rs. in lakhs)

Item	1971-72	1972-73
Gross receipts	1,218	999
Operating expenses	1,214	995
NET PROFITS	4	4

A CASE STUDY OF PRICE BEHAVIOUR IN RELATION TO DEVELOPMENT OF ROADS IN HIMACHAL PRADESH

The object of this case study which was taken up at the instance of the Secretary (Economics and Statistics), Himachal Pradesh Government is to assess the importance of roads in the economy of the Pradesh *vis-a-vis* the position of availability of roads at present in comparison to the road requirements of the Pradesh for the rapid economic and social development. As the price structure of essential commodities is an important indicator of economic development of any area and is primarily dependent on the availability of good means of communications, the main emphasis, in this study has been laid on the price variation of some essential commodities at various places, i.e., main centres (places well served by roads) and the remote places (approachable by mule tracks/bridle paths).

2. For the purpose of the study, two important tracts of Himachal Pradesh, namely: (i) Kalka-Simla-Rampur-Kalpa-Pooh-Sumdo-Hurling-Tabo; and (ii) (a) Simla-Theog-Jubbil-Rohru-Basla and (b) Pathankot-Chamba-Tissa-Sathias-Traila-Dumas-Bairagarh were selected purposively, so as to study the price behaviour of few essential commodities. The data for retail prices of some essential commodities were collected at these places for four weeks of the month of March, 1972. Apart from this, the freight charges from the feeding markets to these places were also recorded. The information relating to the availability of some infra structures like educational institutions, medical facilities, credit facilities for farmers, post office, etc., which generally go with the development of area, was also collected during the course of this study.

DISTANCES OF STUDY CENTRES AND VILLAGES FROM IMPORTANT PLACES

3. The distance of the places covered by this survey from the places like State headquarters, district headquarters, block headquarters or feeding centres have been reported in Tables 1 and 2.

TABLE 1—DISTANCES OF PLACES COVERED BY SURVEY

Place	District	Distance in kilometres from		
		Simla	District headquarters	Block headquarters
1	2	3	4	5
Rampur	.. Mahasu	132	128	0
Kalpa	.. Kinnaur	270	0	0

1	2	3	4	5
Pooh	Kinnaur	290	71	0
Sumdo	Lahaul and Spiti	352	246	83 (appx.)
Tabo	Lahaul and Spiti	384	214	51 (appx.)
Theog	Mahasu	32	28	0
Rohru	Mahasu	129	125	0
Jubbal	Mahasu	100	96	0
Basla	Mahasu	143	139	14

4. All these places are accessible by metalled roads except for Tabo, Basla and Rohru. Rohru is 129 kilometres from Simla, out of which 118 kilometres upto Hatkoti is metalled and the rest 11 kilometres are unmetalled. Basla is 14 kilometres from Rohru and is accessible by a bridle path running upstream along Shikri Nullah. Tabo is situated at a distance of 32 kilometres from Sumdo and a mule track connects these two places running upstream along the left bank of Spiti river. Theog, Rampur, Pooh and Sumdo are on the National Highway 22 i.e., Hindustan Tibet road. Kalpa is connected with the National Highway No. 22 by a metalled road of 17 kilometres length.

TABLE 2—DISTANCES OF PLACES COVERED BY SURVEY

Place	District	Distance in kilometres from		
		Pathankot (Feeding market)	Chamba (District head- quarters)	Block headquarters
1	2	3	4	5
Chamba	Chamba	122	0	0
Tissa	Chamba	194	72	0 (Tissa)
Traila	Chamba	218	96	24 (Tissa)
Sathias	Chamba	219	97	25 (Tissa)
Dumas	Chamba	217	95	23 (Tissa)
Bairagarh	Chamba	223	101	29 (Tissa)

5. Chamba and Tissa are connected with Pathankot by a metalled road. Sathias, Traila, Bairagarh and Dumas are connected with Tissa by a jeepable road upto the length of 20 kilometres and the rest 5, 4, 3 and 9 kilometres are covered by a mule track, respectively.

6. The actual and aerial (crow flight) distances between the different centres subjected to study are given in Table 3 below:—

TABLE 3—ACTUAL AND AERIAL DISTANCES

From	To	Actual distance in km. by road	Aerial distance in km.
Simla	Rampur	128	61
Rampur	Kalpa	152	57
Simla	Kalpa	280	116
Simla	Sumdo	331	174
Pooh	Sumdo	55	32
Chamba	Banjradoo	72	32
Simla	Rohru	108	58

Source:—P.W.D., Himachal Pradesh.

7. It may be observed from the above table that the actual road-length is nearly double or sometimes more than the double the aerial distance between two places.

DESIGN OF THE STUDY

8. The data on the study variate—"retail prices of various commodities on different dates and at different places" were collected. These prices can be considered as an additive effect of two variables R_i the i th place effect and S_j the j th date effect. This linear model without interaction can be mathematically expressed as:—

$$P_{ij} = U + R_i + S_j + E_{ij}, \text{ where}$$

P_{ij} is the price of a particular commodity at i th place and j th date;

U is the general mean;

R_i is the i th place effect and is determined by the distance factor;

S_j is the j th date effect; and

E_{ij} is the error component corresponding to a particular P_{ij} .

9. The price data thus collected was analysed for the various components of variation i.e., dates, places, error, etc. After the analysis was conducted, the ratios of the mean sum of squares for dates and places with error means sum of squares were tested against Snedecor's F —Ratio at the respective degrees of freedom. If either of the effects gave significant results then the critical differences were computed for the comparison of the absolute differences existing in the means by:

C.D. for comparing means of prices

$$= \sqrt{\frac{2 \times K^2}{mn} \times \text{tedf, } L}$$

where k^2 is the estimated error mean sum of squares,
 m is the number of the places at which prices were collected,
 n is the number of dates for which prices were collected and
 t_{edf} , L is the t -value associated with the error degrees of freedom at L level of significance.

If the observed absolute difference in the mean prices was greater than the calculated critical difference then the prices at the two places/dates differ highly significantly from each other.

RESULTS AND DISCUSSION

10. The analysis revealed that the prices did not differ significantly from each other as far as the dates were concerned. However, the prices of all the commodities had highly significant F —Ratios (significant at 1 percent level of significance). The mean prices of all the commodities averaged over all dates along with the critical differences for comparing the prices at any two places for a particular commodity have been reported in Table 5 and 6.

DISCUSSION FOR A PARTICULAR CASE

11. *Wheat Flour*.—There are no significant differences in the prices of this commodity between Kalka-Simla, Simla-Rampur, Kalpa-Pooh and Jubbal-Rohru since these places are being fed by a common market i.e. Ambala. A special mention has to be made for the price differences between Sumdo-Tabo, Sumdo-Hurling and Hurling-Tabo. The absolute difference between the prices of this commodity at Sumdo and Tabo is Rs. 0.50 per kilogram where the critical difference at 99 per cent confidence level is Rs. 0.10 only. This paramount difference is attributable to only one reason i.e., non-availability of the mechanised means of transportation. The goods from Sumdo are carried to Hurling and Tabo by mules, donkeys and *Churus* (Joe's) at the rate of Rs. 7.50 per quintal and Rs. 25.00 per quintal and the distance of these places from Sumdo is 10 kms and 32 kms, respectively. Another alarming disparity in the prices of this commodity can be observed between Rohru and Basla (Rs. 0.17/kilogram). Basla is 14 kilometres from Rohru and is accessible by a bridle path which can be considered as less than jeepable track. The freight charges from Rohru to Basla are Rs. 8.00 per quintal and the goods are carried by mules. These facts can be considered as generalised results for all the commodities for all the remote areas. The absolute differences for the said places for coarse rice, gramdal, *malka masoor*, *gur*, sugar, salt, onion, kerosene oil and washing soap (Niril) are much greater than the calculated critical differences thus showing a highly significant difference for all these commodities. The prices of some of the most essential commodities like salt, washing soap, coarse rice, wheat flour and onions registered an increase of 400 per cent, 50 per cent, 67 per cent, 80 percent and 275 percent, respectively at Tabo (Lahaul and Spiti district)

with respect to Simla—the State headquarters. This is entirely due to the non-existence of roads in this part of the State. The price differences between Rohru and Basla (Mahasu district) for these commodities also registered an increase of 40 per cent, 6 percent, 20 per cent, 14 percent and 11 percent, respectively.

12. A specific mention has to be made in connection with the prices of kerosene oil per litre at places like Sumdo (Rs. 2.00) and Tabo (Rs. 2.40) when compared to its price at Simla (Rs. 0.88).

13. Wheat has not been included in the analysis since it is made available to the public as well as the government employees in Pooh sub-division of Kinnaur, entire Lahaul & Spiti district and Pangi valley of Chamba district at a rate of 10 kilograms per head per month at Rs. 45.00 per quintal. The workers engaged in road construction in Kinnaur district are also given wheat at subsidized rates at the rate of 30 kilograms per labourer per mensem. It is being distributed among various workers by the concerned sectional officers and S.D.O's. The labourers get wheat in Kinnaur district at Rampur prices. Details relating to distribution of subsidized foodgrains in Himachal Pradesh during the period 1969-70 to 1971-72 may be seen in Table No. 7.

14. The data given in table 6 reveals that the prices at the remote centres like Sathias, Traila, Bairagarh and Dumas differ highly significantly from Pathankot as well as Chamba for all the commodities. Sathias and Dumas do not differ significantly from each other for the prices of wheat flour, coarse rice, *mash dal* and salt.

15. The price differences of all the tertiary villages with respect to Pathankot, the feeding centre, are attributable to the fact that mechanized means of transportation do not exist in these areas.

16. The prices of some of the most essential commodities like wheat flour, gram *dal*, sugar, onion, salt and kerosene oil registered an increase of 50 per cent, 64 per cent, 54 per cent, 144 per cent, 133 per cent and 114 per cent at Bairagarh with respect to Pathankot. The price of onion being Re. 0.45 per kilogram at Pathankot rose to Rs. 1.10 per kilogram at Bairagarh. Similarly prices of salt and kerosene oil which were Re. 0.15 kilogram and Re. 0.70 per litre at Pathankot increased to Re. 0.35 per kilogram and Rs. 1.50 per litre, respectively at Bairagarh. The level of prices for Dumas was even higher than that of Bairagarh for some commodities like *gur*, salt, onion, kerosene oil and washing soap. In case of Dumas the increase in respect of these commodities was of the order of 71 per cent, 167 per cent, 247 per cent, 173 per cent and 50 per cent, respectively with respect to Pathankot. Onion which was selling at Re. 0.45 per kilogram at Pathankot was available at Rs. 1.50 per kilogram at Bairagarh and at Rs. 1.91 per kilogram at Dumas.

FREIGHT CHARGES

17. As informed by a respondent at Pooh who has been running his shop since 1961, the transportation of goods was done by mules from Rampur upto 1961. The freight paid by the shopkeepers during that time was Rs. 80.00 per quintal. By 1965-66, the road upto Tapri was opened to general traffic and Tapri to Pooh was a jeepable tract. In these days the freight charges showed a progressive decline to Rs. 40.00 per quintal. In 1966-67, when Hindustan Tibet road was opened for general traffic, the freight charges dropped to Rs. 18.00 per quintal from Rampur to Pooh and Rs. 26.80 per quintal from Simla to Pooh. With more development of the road, the present state of freight charges stands as:—

(i) Government approved rates:—

Simla to Pooh	..	Rs. 18.00 per quintal
Ambala to Pooh	..	Rs. 20.00 per quintal

(ii) The private operators carry goods from Simla to Pooh at the rate of Rs. 14.00 per quintal even.

18. Parallel to this situation, the freight charges from Sumdo to Tabo and Rohru to Basla are Rs. 25.00 per quintal and Rs. 8.00 per quintal whereas the distance between these places is 32 kilometres and 14 kilometres, respectively.

19. This very clearly indicates that the price structure is directly dependent upon the availability of mechanised means of transportation.

INFRA-STRUCTURE

20. Table 4, gives the details of some institutions existing in the villages and towns covered by the study. These institutions can be considered as the yard sticks of measuring the multifaced development in a particular area:—

TABLE 4--INSTITUTIONS IN TOWNS AND VILLAGES

Place	Infra-structure present
Rampur	.. College, Higher Secondary School, Post Office, Agricultural Credit Co-operative Society, Block headquarters, Primary Health Centre and Veterinary Clinic.
Kalpa	.. High School, Post Office, Agricultural Credit Co-operative Society, Block headquarters and Dispensary.
Pooh	.. High School, Post Office, Agricultural Credit Co-operative Society, Block headquarters and Dispensary.
Tabo	.. Middle School, Post Office and Dispensary
Hurling	.. Post Office.

1

2

Chamba	.. College, Higher Secondary School, Post Office, Agricultural Credit Co-operative Society, Block headquarters and Primary Health Centre, Veterinary clinic.
Tissa	.. High School, Post Office, Agricultural Credit Co-operative Society, Block headquarters and Dispensary.
Bairagarh	.. Middle School, Post Office and Dispensary.

Note.—Dumas, Sathias and Trail were served by Bairagarh.

21. It can be observed from this table that as the means of communication and transport become rarer, the existence of these institutions also goes on diminishing or practically to no existence level. Places like Rampur, Chamba, Pooh, Kalpa and Tissa have all the necessary infra-structures, due to the fact that these places are connected by metalled roads with other main centres.

FINDINGS OF THE STUDY

22. (i) The retail prices of consumer goods increase as the distance from the feeding market increases (to the various study markets and villages).

(ii) In case of places in remote interior when the mules and donkeys are the only means of transporting the consumer goods, the prices not only differ highly significantly with respect to the feeding centres but from the places situated in the nearest vicinity on the main roads also.

(iii) The freight charges have shown a tendency to decline considerably in case of centres which have been linked with main centres by good roads.

(iv) Existence of some basic infra-structures which could be considered as a yard-stick for measuring the extent of development is directly proportional to the existence of better roads.

(v) The actual distances between some places is 200 per cent as compared to the aerial distances between the same places—showing that more road length is required in hilly areas as compared to the plains.

TABLE 5—CENTRE-WISE AND COMMODITY-WISE PRICES

(In Rs.)

Prices on Kalka, Simla, Rampur, Kalpa, Pooh, Sumdo, Tabo, Theog, Rohru, Jubbal, etc., tract											
Commodities/places (district)	Wheat flour (kg.)	Rice coarse (kg.)	Maize (kg.)	Gramdal (kg.)	Malka masoor (kg.)	Gur (kg.)	Sugar (kg.)	Salt (kg.)	Onion (kg.)	Kerosene oil (litre)	Washing soap Nirol (kg.)
Kalka (Ambala)	.. 1.04 (100.00)	1.15 (100.00)	0.83 (100.00)	1.25 (100.00)	N.T.	1.75 (100.00)	3.27 (100.00)	0.15 (100.00)	0.65 (100.00)	N.A. (100.00)	3.75 (100.00)
Simla	.. 1.07 (102.9)	1.20 (104.3)	0.90 (108.4)	1.50 (120.0)	N.T.	2.00 (114.3)	3.37 (103.1)	0.20 (133.3)	0.60 (92.3)	0.88 (100.0)	4.00 (106.7)
Rampur (Mahasu)	.. 1.15 (110.6)	1.22 (106.1)	0.85 (102.4)	1.50 (120.0)	2.50 (100.0)	2.00 (114.3)	3.37 (103.1)	0.25 (166.6)	0.77 (118.5)	0.92 (104.5)	4.00 (106.7)
Kalpa (Kinnaur)	.. 1.25 (120.2)	1.40 (121.7)	1.00 (120.5)	1.80 (144.0)	N.T.	2.25 (128.6)	3.37 (103.1)	0.50 (333.3)	1.50 (230.8)	1.12 (127.3)	4.50 (120.0)
Pooh (Kinnaur)	.. 1.29 (124.0)	1.47 (127.8)	1.00 (120.5)	1.82 (145.6)	2.70 (108.0)	2.06 (117.7)	3.44 (105.2)	0.50 (333.3)	1.25 (192.3)	1.40 (159.1)	5.00 (133.3)
Sumdo (Lahaul and Spiti)	.. 1.40 (134.6)	1.50 (130.4)	1.10 (132.5)	2.25 (180.0)	2.62 (104.8)	2.25 (128.6)	4.00 (122.3)	0.50 (333.3)	1.60 (246.1)	2.00 (227.3)	5.50 (146.7)
Hurling (Lahaul and Spiti)	.. 1.70 (163.5)	1.60 (139.1)	N.T.	2.50 (200.0)	3.00 (120.0)	2.50 (142.8)	4.25 (130.0)	0.80 (533.3)	N.T.	N.T.	N.T.
Tabo (Lahaul and Spiti)	.. 1.90 (182.7)	2.00 (173.9)	N.T.	2.75 (220.0)	3.25 (130.0)	2.70 (154.3)	5.00 (152.9)	1.00 (666.7)	2.25 (345.1)	2.40 (272.7)	6.00 (160.0)
Theog (Mahasu)	.. 1.50 (100.9)	1.20 (104.3)	0.95 (114.5)	1.50 (120.0)	2.20 (88.0)	2.00 (114.3)	3.45 (105.5)	0.20 (133.3)	0.80 (123.1)	0.90 (102.3)	4.50 (120.0)
Jubbal (Mahasu)	.. 1.15 (110.6)	1.25 (108.7)	0.95 (114.5)	1.60 (128.0)	2.50 (100.0)	2.00 (114.3)	3.59 (109.8)	0.25 (166.6)	0.80 (123.1)	1.20 (136.4)	4.50 (120.0)
Rohru (Mahasu)	.. 1.20 (115.4)	1.25 (108.7)	0.95 (114.5)	1.60 (128.0)	2.50 (100.0)	2.00 (114.3)	3.55 (108.6)	0.25 (166.6)	0.90 (138.5)	1.20 (136.4)	4.50 (120.0)
Basla (Mahasu)	.. 1.37 (131.7)	1.50 (130.4)	1.00 (120.5)	2.00 (160.0)	2.75 (110.0)	2.25 (128.6)	4.00 (123.3)	0.35 (233.3)	1.00 (153.8)	1.65 (187.5)	4.75 (126.7)

Note.—Figures in parenthesis indicate the percentage of prices at various places with respect to Kalka or Simla (whichever the base may be).

TABLE 6—CENTRE-WISE AND COMMODITY-WISE PRICES

(In Rs.)

Commodities/places		Prices on Pathankot, Chamba, Tissa, Sathias, Traila, Dumas, Bairagarh tract										
		Wheat flour (kg.)	Rice coarse (kg.)	Maize (kg.)	Gramdal (kg.)	Mashdal (kg.)	Gur (kg.)	Sugar (kg.)	Salt (kg.)	Onion (kg.)	Kerosene oil (litre)	Washing soap Nirol (kg.)
1	2	3	4	5	6	7	8	9	10	11	12	
Pathankot	..	1.00 (100.0)	1.18 (100.00)	0.75 (100.00)	1.30 (100.00)	2.45 (100.00)	1.67 (100.00)	3.25 (100.00)	0.15 (100.00)	0.45 (100.00)	0.70 (100.00)	3.50 (100.00)
Chamba	..	1.20 (120.0)	1.25 (105.9)	0.80 (106.7)	1.50 (115.4)	3.00 (122.4)	2.00 (119.8)	3.37 (103.7)	0.20 (133.3)	0.80 (177.8)	0.79 (112.8)	3.50 (100.0)
Tissa	..	1.30 (130.0)	1.33 (112.7)	N.T.	1.67 (128.5)	2.50 (102.0)	2.25 (134.7)	N.T.	0.30 (200.0)	1.20 (266.7)	0.88 (125.7)	4.75 (135.7)
Sathias	..	1.39 (139.0)	1.38 (116.9)	1.00 (133.3)	1.88 (144.6)	2.50 (102.0)	2.50 (149.7)	N.T.	0.40 (266.7)	1.30 (288.9)	1.80 (257.1)	5.00 (142.8)
Traila	..	1.37 (137.0)	1.50 (127.1)	1.25 (166.7)	2.00 (153.8)	2.81 (114.7)	2.50 (149.7)	4.50 (138.5)	0.40 (266.7)	2.00 (444.4)	1.85 (264.3)	6.00 (171.4)
Dumas	..	1.37 (137.0)	1.37 (116.1)	N.T.	1.75 (134.6)	2.50 (102.0)	2.85 (170.6)	4.00 (123.1)	0.40 (266.7)	1.56 (346.7)	1.91 (272.8)	5.25 (150.0)
Bairagarh	..	1.50 (150.0)	1.63 (138.1)	1.00 (133.3)	2.13 (163.8)	2.69 (109.8)	2.40 (143.7)	5.00 (153.8)	0.35 (233.3)	1.10 (244.4)	1.50 (214.3)	4.50 (128.6)
Critical difference per cent level of significance		0.02	0.04	0.06	0.04	0.06	0.09	0.06	0.04	0.22	0.04	0.16

Note.—Figures in parenthesis indicate the percentage of prices at various places with respect to Pathankot.

TABLE 7—DISTRIBUTION OF SUBSIDIZED FOODGRAINS IN HIMACHAL PRADESH DURING THE YEAR 1969-70 TO 1971-72

		Distribution/allotment of subsidized foodgrains in Himachal Pradesh during					
Serial No.	Name of district	1969-70		1970-71		1971-72	
		Quantity (In Qtls.)	Amount (In Rs.)	Quantity (In Qtls.)	Amount (In Rs.)	Quantity (In Qtls.)	Amount (In Rs.)
1	2	3	4	5	6	7	8
1.	Lahaul and Spiti	—	—	3,458	1,08,083	—	2,06,461
2.	Kinnaur	4,740	89,785	4,876	83,378	—	2,27,259
3.	Chamba	1,950	68,200	2,558	83,000	—	2,00,375
4.	Mahasu	675	27,000	713	26,831	—	3,67,398
5.	Outer Seraj area of Kulu district ..	—	12,000	700	3,600	—	38,819
6.	Kangra district	175	7,000	162	6,464	—	6,464
7.	Sirmur	—	—	—	—	—	51,683
8.	Mandi	—	—	—	—	—	78,292
9.	Bilaspur	—	—	—	—	—	1,549
TOTAL ..		7,540	2,03,985	12,467	3,11,356	—	11,78,260

Source:—Civil Supplies Department, Himachal Pradesh.

APPENDIX

BASIC INFORMATION ABOUT HILLY AREAS

TABLE—1 BASIC INFORMATION ABOUT HILLY AREAS

AREA AND POPULATION FOR ALL HILLY AREAS

State/Union Territory/District	Area (sq. km.)	Population (1971)	Scheduled caste population	Scheduled tribe population	Literacy percentage (provis- ional)	Workers as percentage to total population (Provisional)
1	2	3	4	5	6	7
1. Himachal Pradesh*:						
1. Chamba ..	8,195	2,55,233	38,269	71,464	18.47	41.16
2. Kangra ..	8,397	13,27,211	2,33,478	—	36.62	26.79
3. Mandi ..	4,018	5,15,180	1,34,531	5,743	30.52	39.62
4. Kulu ..	5,435	1,92,371	48,361	—	23.86	38.57
5. Lahaul and Spiti ..	12,015	23,538	241	17,951	27.32	64.53
6. Bilaspur ..	1,167	1,94,786	47,655	5,236	32.16	39.57
7. Mahasu ..	5,652	4,40,118	1,29,362	3,971	28.44	47.49
8. Simla ..	1,416	2,17,129	54,057	—	38.91	36.24
9. Sirmur ..	2,825	2,45,033	73,949	3,155	23.09	42.57
10. Kinnaur ..	6,553	49,835	9,669	34,090	26.23	60.67
SUB-TOTAL ..	55,673	34,60,434	7,69,572	1,41,610	31.32	36.82
2. Jammu and Kashmir:						
1. Anantnag ..	5,382	8,32,280	117	—	14.31	31.30
2. Srinagar ..	3,013	8,27,697	96	—	21.54	29.43
3. Baramula ..	7,458	7,75,724	68	—	12.57	31.23
4. Ladakh ..	95,876	1,05,291	14	—	13.50	43.48
5. Udhampur ..	4,549	3,38,846	66,389	—	15.42	31.65
SUB-TOTAL ..	1,16,278	28,79,838	66,684	..	..	..
*The number of districts in Himachal Pradesh is now 12 for which area and population figures are as below:—						
District	Area ('000 sq. km.)		Population in lakhs (1971)			
1. Chamba ..	8.2		2.55			
2. Kangra ..	5.3		8.63			
3. Hamirpur ..	1.6		2.54			
4. Una ..	1.5		2.10			
5. Mandi ..	4.0		5.15			
6. Kulu ..	5.4		1.92			
7. Lahaul and Spiti ..	12.0		0.24			
8. Bilaspur ..	1.2		1.95			
9. Simla ..	5.2		4.20			
10. Solan ..	1.9		2.37			
11. Sirmur ..	2.8		2.45			
12. Kinnaur ..	6.6		0.50			
TOTAL ..	55.7		34.60			

	1	2	3	4	5	6	7
3. Assam:							
1. Mikir Hills ..	10,332	3,79,310	9,820	2,10,039	19.12	31.90	
2. North Cachar Hills	4,890	76,047	826	52,583	26.25	42.34	
3. Mizo (now Mizoram)	21,087	3,32,390	82	3,13,299	50.91	46.37	
SUB-TOTAL ..	36,309	7,87,747	10,728	5,75,921	..	..	
4. Manipur:							
1. Manipur North ..	3,417	1,04,175	118	82,706	22.32	52.32	
2. Manipur West ..	4,344	44,975	44	43,996	21.14	50.58	
3. Manipur South ..	4,581	98,114	314	91,984	34.94	40.14	
4. Manipur Central ..	5,605	7,63,260	15,873	55,854	34.61	31.32	
5. Manipur East ..	4,409	62,229	27	59,926	32.96	48.10	
SUB-TOTAL ..	22,356	10,72,753	16,376	3,34,466	32.80	35.92	
5. Meghalaya:							
1. United Khasi and Jaintia Hills ..	14,405	6,05,084	1,886	4,88,358	32.36	46.35	
2. Garo Hills ..	8,084	4,06,615	2,001	3,25,872	22.66	42.80	
SUB-TOTAL ..	22,489	10,11,699	3,887	8,14,230	28.43	44.92	
6. Nagaland:							
1. Kohima ..	7,209	1,75,204	—	1,40,167	30.55	52.21	
2. Mokokchung ..	3,852	1,68,242	—	1,53,601	38.83	47.69	
3. Tuensang ..	5,446	1,73,003	—	1,63,834	12.78	56.29	
SUB-TOTAL ...	16,507	5,16,449	—	4,57,602	27.33	52.09	
7. Tripura:							
1. West Tripura ..	3,359	7,51,605	98,925	1,98,878	32.00	26.80	
2. North Tripura ..	3,541	4,05,009	44,290	1,08,547	33.16	29.83	
3. South Tripura ..	3,577	3,99,728	49,645	1,43,119	25.39	28.13	
SUB-TOTAL ..	10,477	15,56,342	1,92,860	4,50,544	30.87	27.93	
8. Uttar Pradesh:							
1. Uttarkashi ..	8,016	1,47,805	34,189	282	22.03	63.69	
2. Chamoli ..	9,125	2,92,571	49,078	8,155	28.13	57.85	
3. Tehri Garhwal ..	4,421	3,97,385	52,156	435	19.05	51.62	
4. Garhwal ..	5,440	5,53,028	58,457	409	31.53	45.15	
5. Pithoragarh ..	7,217	3,13,747	66,647	15,347	31.37	41.67	
6. Almora ..	7,023	7,50,038	1,44,317	1,874	28.77	39.63	
7. Nainital ..	6,792	7,90,080	1,41,221	52,560	32.51	34.37	
8. Dehradun ..	3,088	5,77,306	67,279	61,672	45.06	35.25	
SUB-TOTAL ..	51,122	38,21,960	6,13,344	1,40,734	..	..	

		1	2	3	4	5	6	7
9. West Bengal:								
Darjeeling	..		3,075	7,81,777	98,277	1,08,586	32.90	37.20
SUB-TOTAL	..		3,075	7,81,777	98,277	1,08,586	..	..
10 Arunachal Pradesh:								
1. Kasueng	..		13,724	86,001	14	67,877	6.99	60.50
2. Subansiri	..		14,797	99,239	5	90,242	5.38	61.44
3. Siang	..		23,723	1,21,936	1	1,05,833	11.71	55.89
4. Tirap	..		6,907	97,470	—	68,845	8.92	54.68
5. Lohit	..		24,427	62,865	319	36,611	15.18	52.93
SUB-TOTAL	..		83,578	4,67,511	339	3,69,408	9.34	57.30
I. GRAND TOTAL	..		4,17,864	1,63,56,510	17,72,067	33,93,101	..	..
II. ALL INDIA TOTAL	..		32,80,483	54,79,49,809	7,99,95,896	3,80,15,162	..	..
Percentage of I to II	..		12.74	2.98	2.21	8.92	..	..

Source:—Census, 1971

TABLE 2—BASIC INFORMATION

HIMACHAL

Item	Unit	Year	Mashasu
1	2	3	4
1. <i>Land utilization:</i>			
(i) Area according to village papers	.. '000 hect.	1968-69	377.67
(ii) Cultivated area	.. '000 hect.	-do-	86.18
(iii) Cropped area	.. '000 hect.	-do-	123.14
(iv) Percentage of net irrigated area to cropped area	.. per cent	-do-	5.70
2. <i>Crops:</i>			
(i) Foodgrains—			
(a) Area :	.. '000 hect.	1970-71	114.5
(b) Production	.. '000 tonnes	-do-	139.9
(ii) Non-foodgrains—			
Area	.. '000 hect.	1968-69	12.34
3. <i>Horticulture:</i>			
(a) Area under fruits	.. '000 hect.	1971	15.3
(b) Production of fruits	.. '000 tonnes	-do-	55.7
4. <i>Forests:</i>			
Area as percentage to total area of the state	.. per cent	-do-	..
5. <i>Roads (other than National Highways)</i>			
Per 100 sq. km. of area.	.. kms	-do-	..
6. <i>Hospitals and dispensaries:</i>			
Per thousand of population.	.. no.	-do-	0.21
7. <i>Educational Institutions:</i>			
Per thousand children of school going age.	.. no.	-do-	..

* Includes area under fruits for Lahaul-Spiti district as well.

** Includes production of fruits for Lahaul-Spiti district as well.

ABOUT HILLY AREAS

PRADESH

Districts									Total
Mandi	Chamba	Sirmur	Bilaspur	Kinnaur	Simla	Kangra	Kulu	Lahaul- Spiti	State
5	6	7	8	9	10	11	12	13	14
379.22	889.91	224.79	115.49	14.04	128.14	772.39	47.18	5.16	2,913.99
86.63	41.83	42.84	30.92	9.35	36.74	232.72	36.54	2.50	608.26
140.88	61.70	73.23	51.69	10.99	45.23	341.96	51.01	2.64	902.17
9.64	6.25	12.21	4.09	39.14	12.86	11.91	5.14	100.00	10.16
132.9	56.4	63.0	50.6	10.1	37.3	309.5	46.7	..	821.0
177.6	78.8	58.2	44.8	7.1	44.4	332.2	66.6	..	949.7
8.08	9.70	8.03	1.99	0.89	7.43	32.06	4.59	..	85.11
6.5	1.2	3.8	0.8	1.0	2.0	6.0	7.7*	..	43.3
21.7	3.2	12.1	2.3	3.1	5.0	16.8	28.7**	..	148.6
..	..	..	..	..	..	..	..	..	38.5
..	..	..	..	..	..	..	..	..	13.43
0.14	0.21	0.19	0.17	0.68	0.26	0.12	0.17	0.46	0.17
..	..	..	..	..	..	..	..	..	5.19

Source:—Economics and Statistics Department,
Himachal Pradesh.

TABLE 3—BASIC INFORMATION ABOUT HILLY AREAS

JAMMU AND KASHMIR

Item 1	Unit 2	Year 3	Districts				
			Anant- nag 4	Sri- nagar 5	Baram- ula 6	Ladakh 7	Udham- pur 8
1. <i>Land Utilisation:</i>							
(i) Area according to village papers	'000 acres	1967-68	537	314	524	139	1,086
(ii) Cultivated area (current fallows and net area sown)	.. '000 acres	1967-68	349	199	339	242	173
(iii) Total area cropped	.. '000 acres	1967-68	378	212	335	43	210
(iv) Percentage of gross irrigated area to total cropped area	.. per cent	1967-68	62.69	64.15	47.46	100.00	7.61
2. <i>Crops:</i>							
(i) Food grains—			Production estimates of paddy, maize and wheat based on crop-cutting survey are not available at district level. In regard to other crops district level estimates based on traditional chakla rates are, however, available.				
(a) Area							
(b) Production							
(ii) Non-foodgrains—							
Area	.. '000 hect.	1971-72	15	6	3	0.01	3
3. <i>Horticulture:</i>							
(a) Area under fruits	.. '000 hect.	1967-68	7	10	7	Neg.	Neg.
(b) Production of fruits	..		N.A.	N.A.	N.A.	N.A.	N.A.
4. <i>Forests:</i>							
Area as percentage to total area of the State	.. percent	1969	60.1	29.4	70.9	Neg.	52.6
5. <i>Roads:</i>			District-wise not available.				
6. <i>Hospitals and dispensaries:</i>							
Per thousand of population	.. no.	1971-72	0.18	0.16	0.21	0.37	0.32
7. <i>Educational Institutions:</i>							
Per thousand children of school-going age	.. no.		District-wise not available.				

Source:—State Statistical Bureau,
Jammu & Kashmir.

TABLE 4—BASIC INFORMATION ABOUT HILLY AREAS

ASSAM

Item	Unit	Year	Mikir and N.C. Hills	Mizo Hills
1	2	3	4	5
1. Land Utilisation:				
(i) Reporting area	..	There is no revenue agency in these districts.		
(ii) Cultivated (net) area	.. '000 hect.	1968-69	68	43
(iii) Total (gross area) cropped	.. '000 hect.	1968-69	78	45
(iv) Percentage of gross irrigated area to cropped area	..	Statistics on area under irrigation are not available.		
2. Crops:				
(i) Food crops—				
(a) Area	.. '000 hect.	1969-70	74	39
(b) Production	.. '000 tonnes	1969-70	199	46
(ii) Non-food crops—				
Area	.. '000 hect.	1969-70	11	1
3. Horticulture:				
(a) Area under fruits	.. '000 hect.	1969-70	4	3
(b) Production of fruits	.. '000 tonnes	1969-70	23*	8*
4. Forests:				
Area as percentage to the total area of the State	.. percent	1971-72	23.3	16.9
5. Roads:				
(including national highways) per 100 sq. km.	.. km.	1971 (31st March)	6.4	9.2
6. Hospitals and dispensaries:				
Per thousand of population	.. no.	1970-71	0.5	0.1
7. Educational Institutions:				
Per thousand children of school-going age	.. no	N.A.	N.A.	N.A.

N.A.—Not available.

*Banana only.

Source:—State Statistical Bureau, Assam.

TABLE 5—BASIC INFORMATION ABOUT HILLY AREAS

MEGHALAYA

Year: 1971-72

Item	Unit	United Khasi and Jaintia hills	Garó hills
1	2	3	4
1. Land Utilisation:			
(i) Reporting area	'000 hect.	1,436.4	815.6
(ii) Cultivated area	-do-	117.1	120.0
(iii) Cropped area	-do-	95.9	100.7
(iv) Percentage of gross irrigated area to cropped area	percent	27.2	15.0
2. Crops:			
(i) Foodgrains—			
(a) Area	'000 hect.	68.2	64.1
(b) Production	'000 tonnes	140.3	58.4
(ii) Non-foodgrains—			
Area	'000 hect.	12.3	30.5
3. Horticulture:			
(a) Area under fruits	'000 hect.	15.4	6.1
(b) Production of fruits	'000 tonnes	47.7	27.9
4. Forests:			
Area as percentage to the total area of the State	percent	4.8	3.5
5. Roads:			
Other than National High- ways per 100 sq. km. of area	km.	16.95	19.8
6. Hospitals and dispensaries:			
Per thousand of population	no.	0.07	0.08
7. Educational Institutions:			
Per thousand children of school-going age	no.	10	14

Source:—State Statistical Bureau, Meghalaya.

TABLE No. 6—BASIC INFORMATION ABOUT HILLY AREAS

NAGALAND (1969-70)

Item	Unit	Districts			Total State
		Kohima	Mokokchung	Tuensang	
1	2	3	4	5	6
1. Land utilization:					
(i) Reporting area (Total area)	.. '000 hect.	614.87	498.31	535.62	1,648.80
(ii) Cultivated area	.. -do-	N.A.	N.A.	N.A.	N.A.
(iii) Cropped area	.. -do-	N.A.	N.A.	N.A.	N.A.
(iv) Percentage of gross irrigated area to cropped area	.. per cent	N.A.	N.A.	N.A.	N.A.
2. Crops:					
(i) Foodgrains—					
(a) Area	.. '000 hect.	N.A.	N.A.	N.A.	88.99
(b) Production	.. '000 tonnes	N.A.	N.A.	N.A.	69.49
(ii) Non foodgrains—					
Area	.. '000 hect.	N.A.	N.A.	N.A.	7.93*
3. Horticulture:					
(a) Area under fruits	.. '000 hect.	..	..	..	..
(b) Production of fruits	.. '000 tonnes	..	..	..	..
4. Forests:					
Area as percentage to total area of State	.. percent	N.A.	N.A.	N.A.	5.00
5. Roads:					
Per 100 sq. km. of area (other than National Highways)	.. km.	14.94	26.57	18.71	19.69
6. Hospitals and dispensaries:					
Per thousand of population	.. no.	0.43	0.43	0.19	0.34
7. Educational institutions:					
Per thousand children of school-going age	.. no.	N.A.	N.A.	N.A.	10

*Includes area under fibre crops.

Source:— Statistical Hand Book of Nagaland, 1970.

TABLE 7—BASIC INFORMATION ABOUT HILLY AREAS

TRIPURA						
Item 1	Unit 2	Districts				Total State 6
		West Tripura 3	North Tripura 4	South Tripura 5		
1. Land utilization:						
(i) Reporting area	.. '000 hect.					1066.04
(ii) Cultivated area (only net area sown)	.. '000 hect.					240.00
(iii) Cropped area	.. '000 hect.					345.00
(iv) Percentage of gross irrigated area to cropped area	.. per cent					6.45
2. Crops:						
(i) Food-grains—						
(a) Area	.. '000 hect.	119.70	70.61	81.05		
(b) Production	.. '000 tonnes	110.70	70.95	76.22		
(ii) Non-food-grains—	..					
Area	.. '000 hect.	4.60	5.65	3.72		
3. Horticulture:						
(a) Area under fruits	.. '000 hect.					
(b) Production of fruits	.. '000 tonnes					
4. Forests:						
Area as percentage to the total area of the State (1967-68)	.. per cent	Due to non-availability of district-wise figures, figures of State as a whole have been shown here.				59.61
5. Roads (other than National Highways):						
Per thousand of population	km.					7.6
6. Hospitals and dispensaries:						
Per thousand of population	.. no.	0.8	0.9	0.10		..
7. Educational institutions:						
Per thousand children of school-going age	.. no.	District-wise no. of children of school-going age is not available and as such total figure of the State as a whole has been shown here.				4.2

Source:—Statistical Department, Tripura

TABLE 8—BASIC INFORMATION ABOUT HILLY AREAS

WEST BENGAL

Item	Unit	Year	Darjeeling district
1	2	3	4
1. <i>Land Utilization:</i>			
(i) Reporting area	.. '000 hect.	1964-65	310.7
(ii) Cultivated area	.. '000 hect.	-do-	103.2
(iii) Cropped area	.. '000 hect.	-do-	121.5
(iv) Percentage of gross irrigated area to cropped area	.. per cent	-do-	19.7
2. <i>Crops:</i>			
(i) Foodgrains—			
(a) Area	.. '000 hect.	1967-68	69.4
(b) Production	.. '000 tonnes	-do-	65.9
(ii) Non-foodgrains—			
Area	.. '000 hect.	-do-	37.6
3. <i>Horticulture:</i>			
(a) Area under fruits	.. '000 hect.	-do-	..
(b) Production of fruits	.. '000 tonnes	-do-	..
4. <i>Forests:</i>			
Area as percentage to the total area of the State	.. per cent	1964-65	10.7
5. <i>Roads:</i>			
(other than National Highways) per 100 sq. km. of area	.. km.	..	..
6. <i>Hospitals and dispensaries:</i>			
Per thousand of population	.. no.	1970	0.10
			(including health centres and clinics)
7. <i>Educational institutions:</i>			
Per thousand children of school-going age	.. no.	..	..

Source:—State Statistical Bureau, West Bengal.

TABLE 9—BASIC INFORMATION

UTTAR

Item 1	Unit 2	Garhwal 3	Chamoli 4
1. <i>Land utilization:</i>			
(i) Reporting area	.. '000 hect.	1,455.38	
(ii) Cultivated area (net area sown only)	.. -do-	348.30	
(iii) Cropped area	.. -do-	N.A.	
(iv) Percentage of irrigated area to total cropped area (net area sown)	.. per cent.	2.50	
2. <i>Crops:</i>			
(i) Foodgrains—			
(a) Area	.. '000 hect.	309.23	
(b) Production	.. '000 tonnes	304.26	
(ii) Non-foodgrains— Area	.. '000 hect.	6.75	
3. <i>Horticulture:</i>			
(a) Area under fruits	.. '000 hect.	..	
(b) Production of fruits	.. '000 tonnes	..	
4. <i>Forests:</i>			
Area as percentage to total area of the district (reporting area)	.. per cent.	57.13	
5. <i>Roads:</i>			
Per 100 sq. km. of area (metalled only)	.. km.	9.5	
6. <i>Hospitals and dispensaries:</i>			
Per thousand of population (1961 Census)	.. no.	0.01	
7. <i>Educational institutions:</i>			
Per thousand children of school-going age	.. no.	..	

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